HELSINKI SCHOOL OF ECONOMICS (HSE)
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THE IMPACT OF GEOGRAPHY AND TRUST ON ACQUIRER RETURNS

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ABSTRACT
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PURPOSE OF THE STUDY

This thesis studies the impact of geographic distance and the relative level of trust between countries on acquirer returns. Their impact on deal characteristics is also tested. In addition it is shown that relative trust levels across countries are strongly affected by cultural factors. This study is partly motivated by the extensive academic literature on the home bias phenomenon in investments, which could result from an information advantage related to geographic and cultural proximity. Such an advantage might also facilitate proximate acquirers to perform better. As seems to be the case with portfolio investments, this information advantage could also extend to cultural similarity. Hence if relative trust proxies cultural biases, it could also facilitate an information advantage and thus better acquisition performance.

DATA AND METHODOLOGY

The data set consists of 2,196 acquisitions of majority stakes by public companies in Western Europe during 1998-2006 with both public and private target companies. Transaction size is limited to above €10 million. The distance between companies is calculated from the coordinates of their headquarter cities. To measure trust, a trust index based on Eurobarometer surveys is constructed. It measures the average level of trust in country *i* towards country *j*. It is then regressed with a full set of country dummies to separate fixed country effects, representing objective levels of trust, and the residuals, representing the bias component of trust. A positive trust dummy is then based on these residual trust values and used to test whether deals in positive trust level countries differ from those in negative trust level countries.

RESULTS

The results provide support for both main hypotheses. Distance seems to have a negative impact on acquirer returns, whereas positive relative trust level has a positive impact. The impact of distance is largest when the target is small and privately held. The impact of trust on the other hand is strongest when the target is non-local, privately held, not located in a capital city and operates in the same industry as the acquirer. Perhaps apart from the last one, same industry effect, these results provide support the hypothesis that geographic proximity and high relative level of trust towards the target country facilitate an information advantage. Both distance and trust also appear to have an impact on deal characteristics.

KEYWORDS: M&A, merger, acquisition, geography, distance, trust, event study, acquirer returns, culture, information, home bias

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THE IMPACT OF GEOGRAPHY AND TRUST ON ACQUIRER RETURNS

TUTKIMUKSEN TAVOITE

Tämä työ tutkii maantieteellisen etäisyyden ja maiden välisen suhteellisen luottamustason vaikutusta yritysostojen tuottoihin. Myös niiden vaikutus kauppojen ominaispiirteisiin testataan. Lisäksi näytetään, että kulttuuritekijät vaikuttavat voimakkaasti maiden välisiin suhteellisiin luottamustasoihin. Tutkimus pohjautuu osittain laajaan akateemiseen kirjallisuuteen sijoitusten home bias -ilmiöstä, joka kenties johtuu maantieteelliseen ja kulttuurilliseen läheisyyteen liittyvästä informaatioedusta. Samankaltainen etu voisi johtaa läheisten yritysostojen muita parempaan onnistumiseen. Kuten portfolio-sijoitusten tapauksessa näyttäisi, tämä etu voi myös ulottua kulttuurilliseen samankaltaisuuteen. Siten jos suhteellinen luottamus heijastaa kulttuurillisia käsityksiä ja ennakkoluuloja, se voisi johtaa myös informaatioetuun ja parempiin yritysostojen tuottoihin.

TUTKIMUSAINEISTO JA -MENETELMÄT

Tutkimusaineisto koostuu 2,196 julkisten osakeyhtiöiden tekemästä yritysostosta Länsi-Euroopassa vuosina 1998-2006. Kohteina on sekä julkisia että yksityisiä yhtiöitä. Transaktiokoko on rajattu yli €10 miljoonaan. Yritysten välinen etäisyys lasketaan niiden pääkonttorikaupunkien koordinaateista. Luottamusta mitataan Eurobarometri-kyselyihin perustuvalla indeksillä. Se mittaa maan *i* kansalaisten luottamusta maan *j* kansalaisiin. Indeksin arvot regressoidaan täyden maadummy-muuttujasetin avulla, jolla erotetaan objektiiviset luottamustasot ja jäännökset, jotka kuvaavat luottamuksen ns. harhakomponenttia. Jäännöksen positiiviseen tai negatiiviseen arvoon perustuvaa positiivinen luottamus -dummya käytetään luottamuksen vaikutusten tutkimiseen.

TULOKSET

Tulokset tukevat päähypoteeseja. Etäisyydellä näyttää olevan negatiivinen vaikutus yritysostojen tuottoihin, kun taas positiivisella luottamuksella on positiivinen vaikutus. Etäisyyden vaikutus on suurin, kun kohdeyritys on pieni ja ei-julkinen. Luottamuksen merkitys taas on suurin kun kohde on ei-paikallinen, ei-julkinen, ei sijaitse pääkaupungissa ja toimii samalla toimialalla kuin ostaja. Kenties viimeistä lukuun ottamatta nämä tulokset tukevat hypoteesia maantieteellisen läheisyyden ja korkean luottamustason synnyttämästä informaatioedusta. Etäisyys ja luottamus näyttävät molemmat myös vaikuttavan kauppojen ominaispiirteisiin.

ASIASANAT: Yrityskauppa, yritysosto, maantiede, etäisyys, luottamus, event study, tuotto, kulttuuri, informaatio, home bias

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1. Introduction

This thesis examines the impact of geographic distance and relative trust levels between countries on acquirer returns. A recent paper by Kedia et al. (2008) suggests that local acquirers perform better than non-local ones. This hypothesis is tested using Western European data. The second main hypothesis tested is that a high relative level of trust in the acquirer's home country towards the target country has a positive impact on acquirer returns. Furthermore it is confirmed that relative trust between countries is highly affected by cultural factors. It is also shown that deal characteristics differ depending on proximity and relative trust level, and that a home bias phenomenon seems to exist in M&A volumes as well.

The role of geographic location in economic activity has drawn increasing interest among academics lately. Another recent paper by Kang and Kim (2008) studies partial block acquisitions in the U.S. and finds evidence supporting the results of Kedia et al. (2008). In the case of block acquisitions the connection between distance and efficiency of corporate governance activities by the acquirer is more obvious than it is in acquisitions of majority stakes though. Someone buying a 5% stake in a company on the other side of the globe might not find the time to attend every board meeting, but the same does not necessarily hold for someone buying the whole company.

The explanations offered for higher returns in local acquisitions include larger synergy potential from more efficient sharing of resources, common facilities and human capital, as well as an information advantage related to proximity. The former explanation seems quite convincing in e.g. the banking industry, where such local advantage has been well documented in academic literature. The latter one is likely to be most crucial in the case of knowledge-based assets and targets that have less information publicly available.

The first explanation, synergies, is undoubtedly one main motivation of mergers and acquisitions. The importance of synergies in creating value has been well recognized in the academic literature (see e.g. Bradley et al. 1983 and 1988). Cost synergies are usually

considered more certain than revenue synergies, and thus responsible for most of the value creation at announcement (see e.g. Houston et al. 2001). It seems likely that the overlap in the organizations of geographically proximate firms is larger and hence facilitates larger cost saving potential than in more distant targets. This would be consistent with the empirical results.

The second explanation, information asymmetries related to location, could result in nearby acquirers being better able to analyze their targets and hence bid more accurately for them, resulting in better acquisition performance. The information advantage of geographic proximity has been documented directly in a few studies. For example, local analysts seem to make more accurate forecasts than distant ones (Malloy, 2005). Geographic proximity could be an important factor facilitating the transfer of soft information and leading to better analysis of target companies.

The role of trust is somewhat less intuitive than the role of distance. However, if information asymmetry explains better local acquirer performance, there is a vast amount of academic literature that suggests a similar information advantage might result directly from trust, or alternatively from cultural similarity, which in turn can be proxied by trust. The power of cultural factors in explaining trust has been demonstrated in several studies.

Studying the role of relative trust instead of absolute trust is pioneered by Guiso et al. (2007) who study the impact of cultural biases on international trade and investment decisions. They compile a trust index value in country *i* towards the nationals of country *j* for European countries based on Eurobarometer surveys. Arguing that there is an objective level for the trustworthiness of each country, while the rest of the trust is based on cultural biases, they strip out the fixed country effects to obtain relative trust levels. They also show that relative trust levels between countries are highly affected by cultural factors. The same trust index values and partly the same methodology are utilized in this study to study the impact on acquirer returns.

Several studies have found cultural attributes to affect investors' investment decisions (see e.g. Grinblatt and Keloharju, 2001). This provides support for the existence of an information advantage related to both geographic and cultural proximity. On the other hand, some research suggests home bias does not result entirely from rational reasons, but is also impacted by other factors, such as patriotism (Morse and Shive, 2003).

Guiso et al. (2007) find that cultural biases affect the volumes of cross-border trade, direct investment and portfolio investment. The last one is the hardest to motivate on objective grounds, since unlike in the first two cases, foreign public companies are unable to discriminate against foreign investors in any way. The possible rational explanation of an information advantage related to assets in a culturally similar country still remains.

There is one more factor potentially contributing to the differences in value creation. Implementing non-local transactions could be more difficult, resulting in poorer acquisition performance. Strategic literature supports the hypothesis of implementation difficulties related to cultural difference. Datta (1991), for example, finds compatibility of management styles to be an important factor in acquisition success. The findings of Larsson and Finkelstein (1999) provide empirical support for this claim. Both distance and trust could also help predict implementation difficulties.

The results of this study provide support to earlier empirical research. Geographic distance does seem to have a negative impact on acquirer returns. This result is statistically significant and robust to several model specifications. Supporting the second main hypothesis, higher level of trust in the home country of the acquirer towards the home country of the target seems to increase acquirer returns as well. A modified version of the analysis of Guiso et al. (2007) performed in this study supports their results that the level of trust towards a country is affected by cultural factors. Furthermore it is shown that proximity and the level of trust have an impact on typical deal characteristics. A home bias in M&A volumes is also documented.

The rest of the thesis is organized as follows. Section 2 reviews the relevant academic literature to build testable hypotheses. Section 3 presents the hypotheses. Section 4 describes the data and methodology used. Section 5 discusses the obtained results. Section 6 concludes.

2. Literature review

2.1 Geographic proximity in M&A transactions

Kedia et al. (2008) study acquisitions by U.S. public firms and find that acquirer returns in local transactions (defined in their paper as below 100 km distance) are more than twice those in non-local transactions. The total returns are also higher in local transactions. They find no explanation for this in target or acquirer characteristics, and show that the effect is larger with target companies having R&D programs. The impact of proximity is also stronger when the target is small, privately held, located in a non-metro area and not covered by analysts. These results provide strong support for the conclusion that information has an important role.

Kang and Kim (2008) get similar results studying partial block acquisitions in the U.S. According to their study both the announcement returns and post-acquisition operating performance of the target companies are better with proximate targets. They also find that the positive valuation effect is stronger when targets are riskier, more R&D intensive, perform poorly, or have a higher insider ownership. This suggests information asymmetries or monitoring costs associated with geographic proximity are an important source of gains in partial block acquisitions.

Consistent with the U.S. results, Goergen and Renneboog (2004) study European takeover bids and find that domestic bids create larger short-term wealth effects than cross-border mergers and acquisitions. The results remain also after controlling for the characteristics of the bid and the target firm. Curiously, Goergen and Renneboog also

report that when a UK target or bidder is involved, the abnormal returns are almost twice as high as in bids involving both a Continental European target and bidder.

There are several studies focusing on bank mergers that find local transactions performing better (see e.g. Cornett and Tehranian, 1992, Houston and Ryngaert, 1994, Houston et al. 2001, and DeLong, 2001). In commercial banks' business it is fairly easy to see why proximity could enhance potential cost savings, for example in the form of overlapping branch networks. Unfortunately it is not equally obvious in all businesses, and hence generalizing these findings has its problems as well.

Part of the better performance of local acquirers could perhaps be explained by the spatial clustering of economic activity. Audretsch and Feldman (2003) conclude that location and geographic space are key factors in explaining the determinants of innovation and technological change. Geographic proximity facilitates diffusion of knowledge (see e.g. Krugman, 1991, or Jaffe et al. 1993). This provides two potential explanations for better local acquisition performance. Assuming that industries are highly clustered, it could be that the companies operating nearby are likely to offer better synergy potential than those further away. Alternatively, it could be that diffusion of knowledge leads to better-informed nearby acquirers, facilitating them to bid more efficiently.

2.2 Role of information in M&A

A substantial amount of theoretical academic work focuses on the role of asymmetric information in mergers and acquisitions (see e.g. Milgrom, 1981, Milgrom and Weber, 1982, Fishman, 1988, Hirshleifer and Png, 1989, Povel and Singh, 2006, Jennings and Mazzeo, 1993). Fishman's model, for example, suggests that an informed buyer could pre-empt competition from less informed buyers by bidding high enough, and would thus prevent them from becoming informed. This would also maximize the informed bidder's gains. The work of Povel and Singh, Hirshleifer and Png, and Jennings and Mazzeo yields similar conclusions.

The pre-emptive bid theory and the resulting higher likelihood of proximate (supposedly more informed) acquirers to win bidding contests and also make better profits would be consistent with the empirical evidence, explaining both a home bias and higher returns.

There is also direct evidence of an information advantage related to geographic proximity. Malloy (2005) shows that local analysts' estimates are more accurate than those of more distant ones, and their recommendations also have a stronger impact on stock prices. Choe et al. (2000), using Korean data, find evidence that domestic individual investors have an information advantage in large trades over foreign investors. Evidence on such an advantage with institutional investors is weak. Foreign investors trade at worse prices than domestic ones for large trades, for smaller stocks, and more so for sales than for purchases. They sell to domestic investors before a large positive abnormal return on the stock and buy from domestic investors before a large negative abnormal return.

Information can be difficult and costly to acquire. Baik et al. (2007) for example find a positive relationship between analyst coverage and firm value, demonstrating the value of information. The difficulty in acquiring and transferring information applies especially to soft information, which can often be highly relevant in M&A transactions. Coff (1999) observes that the importance of soft information is especially high in knowledge-based assets. The results of Kedia et al. (2008) provide evidence supporting this view. According to them, local returns are higher when the target is R&D intensive.

2.3 Home bias in investment decisions

Investors' preference for investing close to home, referred to as home bias, has been documented in several studies. French and Poterba (1991) find that investors in the U.S., Japan and Britain hold nearly all their wealth in domestic assets, despite the well-known benefits from international diversification. They also find that investors overestimate the returns on their domestic portfolios compared to foreign ones. The results of Tesar and Werner (1995) using data from five countries are similar to those of French and Poterba.

They further show that the compositions of foreign portfolios seem to reflect factors other than diversification of risk, and that transaction costs are not a plausible explanation for the home bias phenomenon.

Dahlquist et al. (2002) attribute part of the home bias phenomenon to corporate governance issues. The prevalence of closely-held firms in most countries reduces the world portfolio of shares available to investors who are not controlling shareholders, which in part helps to explain the investors' underweight in foreign securities.

Coval and Moskowitz (1999) show that a home bias exists even in domestic portfolios. According to their study, U.S. investment managers exhibit a strong preference for local firms. Grinblatt and Keloharju (2001) obtain similar results using data from Finland. They show that, in addition to geographic distance, cultural attributes have a comparable impact. According to their results, investors prefer proximate companies that communicate using the investor's native tongue, and have CEOs of similar cultural background.

Suggesting that the home bias cannot be entirely attributed to objective reasons, Morse and Shive (2003) find that investors in more patriotic countries and more patriotic regions in the U.S. hold smaller foreign equity positions. According to them, the results cannot be explained by the economic, political and social correlates of patriotism.

2.4 Cultural biases and cultural fit in M&A

Economics as a science is largely based on the assumption of rationality. Traditionally this has often implicitly included the assumption that subjective and objective beliefs coincide. More recently this common-prior assumption has drawn an increasing amount of debate though. Some academics argue that rational people might have different priors, and hence might disagree, still being rational. Gilboa et al. (2004), for example, address the problem of rationality of prior beliefs. Brunnermeier and Parker (2005) develop a framework for a rational choice of prior beliefs by an individual. Depending on the view,

cultural biases impacting economic activity could be interpreted either irrational or rational under different priors.

Guiso et al. (2007) use Eurobarometer survey results to construct a trust index that depicts the relative level of trust that European citizens have for citizens of other countries. They show that trust towards a country is strongly affected by cultural factors such as religion, history of conflicts and genetic similarities, and that the effect is larger than would be justified on objective grounds. Moreover, they show that the relative level of trust affects bilateral trade, portfolio investment and direct investment between countries. They conclude that cultural perceptions are important determinants of economic exchange. Spolaore and Wacziarg (2006) argue that cultural similarities also facilitate easier transfer of technological and institutional innovations across countries.

Several sociologic studies have also concluded that people tend to trust more people with similar characteristics, similar culture, similar ethnicity etc. (see e.g. McPherson et al. 2001). DeBruine (2002) shows that similar facial resemblance enhances trust between people. Buchan et al. (2002) also find evidence that increasing social distance decreases cooperation. Bornhorst et al. (2004) show in an experimental setting that the level of trust between countries can result from cultural biases.

Angwin (2001) studies the role of cultural differences in pre-acquisition preparation. He concludes that different national cultures may give rise to variations in the expectations that acquirers and merger partners have for example on the value and role of due diligence. This may lead to misunderstandings and affect acquisition success.

On the other hand culture has an impact on the implementation as well. Datta (1991) conducts a questionnaire-based study and finds compatibility of management styles to be an important factor in acquisition success. The results indicate that acquisitions of firms with a different management style can result in conflicts, difficulties in achieving operational synergies, market share shrinkages and poor performance. The findings of Larsson and Finkelstein (1999) provide further empirical support for these claims.

Haspeslagh and Jemison (1987) emphasize that the probability of value creation in mergers and acquisitions stems not from relatedness but primarily on how the interdependencies that contribute to the benefits are managed.

2.5 Trust in M&A transactions

It is monstrous to trust the man's statements when you cannot trust the man himself

Aristotle

The role of trust in reducing economic transaction costs has been widely recognized in the academic literature (see e.g. Coleman, 1990, and Fukuyama, 1996). Sociologists call *social traps* the situations in which a behavior that yields immediate individual advantage leads to negative long-term consequences (Platt, 1973). According to Barney and Hansen (1994), trust reduces the expectation of such opportunistic behavior. Nooteboom et al. (1997) find that trust has a negative effect on perceived dependence. They divide the risk of dependence into the size and probability of loss.

Perceived risk is undoubtedly a major component in any potential M&A decision process (see e.g. Pablo et al. 1996). Given the one-shot nature of M&A transactions, as well as the typically large sums of money in question, they form a particularly compelling social trap. In this context a higher level of trust could thus be assumed especially important in reducing the expected risk.

There are several theoretical papers modeling domestic and international acquisitions. Horn and Persson (2001) show that decreased international trade costs can increase the profitability of cross-border mergers relative to domestic ones. The main idea is that when trade costs are high, a domestic merger results in very limited international competition and is hence a more profitable venture than a cross-border merger resulting in tough duopoly competition in both markets. On the other hand, when trade costs are low, national mergers do not reduce the competitive pressure to any significant extent. Bjorvatn (2004) uses different methodology but comes to the same conclusion. Assuming

that a higher level of trust does reduce the costs of international trade, this could increase the relative profitability of foreign acquisitions in highly trusted countries.

A higher level of trust could also facilitate easier acquisition of information. As Spolaore and Wacziarg (2006) claim, cultural similarity may favor the transfer of information. In the context of M&A, low trust based on cultural prejudices could hinder communication, and lead to less informed potential acquirers.

The role of trust in promoting cooperation in organizations has been recognized in several studies. La Porta et al. (1997) find evidence that the role of trust is particularly important in large organizations. Costa et al. (2001) find a positive relationship between the level of trust and performance on a team level. If this holds, the low level of trust between the acquirer and the target company might actually predict implementation problems in M&A transactions, and hence justify lower returns.

3. Hypotheses

Based on prior literature, the following testable hypotheses are formulated. They aim at addressing potential implications of an information advantage related to proximate acquisitions. Mainly inspired by the cultural home bias literature, they also extend the analysis to test whether the level of trust, potentially based partly on cultural biases, could constitute a similar advantage.

H1. *Acquirers earn higher announcement returns from geographically proximate targets than from more distant ones.*

Earlier research has found evidence on the better performance of proximate acquirers. Possible explanations for this include an information advantage related to proximity, as well as potentially larger synergies in proximate acquisitions.

H2. *Acquirers earn higher announcement returns from targets located in countries that enjoy a high relative level of trust in the acquirer's home country.*

Trust has been shown to impact economic activity. If the good performance of geographically proximate acquirers results from an information advantage, it could be expected that the level of trust between the countries would have similar results. Trust itself could facilitate easier acquisition of information. Alternatively it could act as a proxy for cultural similarity that might enhance the diffusion of information.

H3. *In addition to objective factors, the level of trust towards a country is affected by cultural factors.*

This hypothesis is extensively discussed by Guiso et al. (2007). Their results provide strong support for this claim. Since the concept of trust and its determinants is very central for this thesis, a modified version of their analysis is done to verify their results and to further increase the understanding of the determinants of trust.

H4. *Geographic proximity and the level of trust towards the target country affect the typical deal characteristics.*

If proximity and trust affect the level of information, they should also affect the perceived risk of transactions. Hence it should be likely that they have an impact on deal characteristics and the choice of target companies. In this thesis the impact on three deal characteristics is tested: the choice of payment method and the probabilities of the target being a public company and operating within the same industry.

H5. *Home bias exists in M&A volumes.*

Since the home bias phenomenon seems to exist in other types of investment, it could be assumed to exist in M&A as well. There are actually more convincing reasons for a home bias to exist in M&A transactions than in portfolio investments. In addition to an

information advantage, geographic proximity could provide more synergy potential and ease the implementation. High relative trust could contribute at least to the latter one as well.

4. Data and methodology

4.1 Transaction data

The transaction details are obtained from the SDC Platinum database. For a part of the sample companies the headquarter cities are not available in SDC. Where applicable, the locations of such companies are therefore searched manually though various sources, most importantly company websites and news releases. If the location of either the target or the acquirer is not known, the deal is omitted. This might mean that the sample is slightly biased towards larger companies that have more easily obtainable information available.

The focus of the study is on relatively large transactions. Very small acquisitions are more likely to be local and could introduce a bias to the results obtained. Small deals also encounter more severe measurement problems in the announcement returns, especially if the acquirer is relatively large. Hence the transaction size is limited to above €10 million and only transactions with a publicly announced deal size are included.

Market data is obtained from Datastream. Transactions in which the acquirer share prices are not available through Datastream are excluded from the sample. This might also bias the sample slightly towards larger acquirers, since their share price data is more likely to be provided by Datastream.

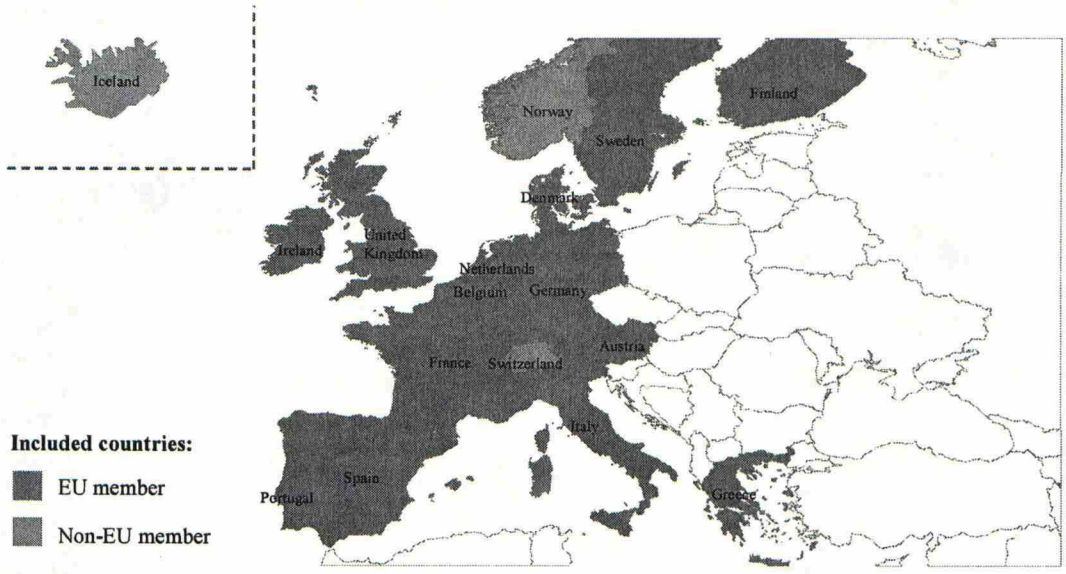

Figure 1. Countries included in the data set.

The final data set consists of 2,196 acquisitions of majority stakes made by public companies in Western Europe during 1998-2006 with both public and private target companies. The geographic area and the countries included in the sample are illustrated in Figure 1. Very small countries located in the region, namely Liechtenstein, Luxembourg and Cyprus, were excluded because the companies headquartered in them are not necessarily likely to have the bulk of their operations in the country. Hence they would potentially bias the impact of distance.

4.2 Calculating distance

Calculating the geographic distance requires location data for each target and acquirer company. As the location of the companies, the headquarter cities are used. This can be problematic in case the bulk of the company's operations is not located near the headquarters. It should be fairly safe to assume that most of the companies do operate near their headquarters though.

The coordinate data for Western European cities is obtained from the GEOnet Names Server (GNS) that provides access to the National Geospatial-Intelligence Agency's (NGA) and the U.S. Board on Geographic Names' (US BGN) database[1].

The distance between cities *i* and *j* is calculated using the formula:

$$d_{i,j} = \arccos[\cos(lat_i)\cos(lon_i)\cos(lat_j)\cos(lon_j) + \cos(lat_i)\sin(lon_i)\cos(lat_i)\sin(lon_j) + \sin(lat_i)\sin(lat_j)] \times \frac{2\pi r}{360} \quad (1)$$

where *lat* and *lon* are the latitude and longitude of the respective cities, and r the radius of earth (6,378 km used here).

4.3 Announcement returns to acquirer

The event study method is used to examine the returns to acquirers. If the markets' assessment is assumed to be unbiased, this gain represents the economic benefit of the acquisition for the shareholders of the acquiring firm together with the stock-price impact of other information released or inferred by investors when firms make acquisition announcements.

The announcement effect for the acquirer of each transaction is calculated using cumulative abnormal returns (CAR). To simplify the measurement, market-adjusted returns are used in the calculations as a proxy for CAR. They are defined as the cumulative returns over the market index of the respective country (MSCI country indices are used where available):

$$CAR_i = \sum r_{i,t} - r_{M,t} \quad (2)$$

where $r_{i,t}$ is the daily return of the stock and $r_{M,t}$ the market return on the same day.

[1] The data is available online at http://earth-info.nga.mil/gns/html/cntry_files.html

Given the short time horizon, this definition is accurate enough to catch the announcement impact, and more sophisticated abnormal return estimates would add little value to the analysis (Brown and Warner, 1985).

4.4 Trust between countries

4.4.1 Measuring trust

Following the methodology of Guiso et al. (2007), a trust index based on the Eurobarometer surveys is used. The surveys are sponsored by the European Commission and designed to measure the public awareness of and attitudes towards the EU and other European Community institutions. What makes them particularly useful for this study is that the respondents are asked directly how much they trust the citizens of each of the countries belonging to the EU, as well as a few other countries. Guiso et al. re-code the qualitative answers setting them as follows:

1 = no trust at all
2 = not very much trust
3 = some trust
4 = a lot of trust

The average level of trust values they calculate are shown in Panel A in Table 1. As can be seen in the table, some countries generally tend to trust more than others, whereas some countries are generally more trusted than others. The tendency of some people to trust more than others has also been documented in several other studies (see e.g. Alesina and La Ferrara, 2002). In the case of Eurobarometer, there are also potential differences in interpreting the qualitative alternatives due to translation differences. Moreover, even in one language the concept of trust can have several different definitions, as discussed by e.g. Bigley and Pearce (1998).

We can probably assume that some nationalities have a reason to be trusted more than some other ones. However, since the perception of the trustworthiness of each nation depends on the source country of trust, there seems to be some room for subjectivity in the results. Part of the trust can be assumed to reflect rational expectations, whereas another part of it might consist of customary beliefs and biases.

Again following the methodology of Guiso et al. (2007), this problem is addressed by calibrating the trust values with a regression including a full set of dummies for each country trusting and each country being trusted. This way the fixed country effects are obtained. Under rational assumptions they should represent the objective characteristics of the country being trusted. The residuals or relative levels of trust, shown in Panel B in Table 1, should hence represent the customary beliefs of the respective countries.

An alternative explanation could be that there is actually a valid reason for certain countries to trust a given country less than some others do, as Guiso et al. (2007) point out. This could be the case if cultural biases actually lead to people treating certain nationalities worse than others. The counterargument of Guiso et al. is that since the country bias also exists in equity portfolios, it cannot result from objective reasons, since public companies cannot discriminate against certain investors.

The trust calibration methodology used effectively sets the average trust from each country to zero, as it does the average trust received by each country. It also allows us to formulate a binary trust variable, dividing the trust into positive and negative buckets, as is done in this study. Positive trust value hence means that the customary trust level in the acquirer's home country towards the target's home country is above average, i.e. positive relative to the general view. The terms *positive trust* or *positive trust level* that are used occasionally throughout the thesis, refer to a positive value of this trust dummy variable.

Table 1
Level of trust between countries

Panel A: Absolute trust index values

This table presents the average trust levels as calculated by Guiso et al (2007). Qualitative answers are re-coded as follows:
1=No trust at all, 2=Not very much trust, 3=Some trust, 4=A lot of trust.

	Trust from:																
	Austria	**Belgium**	**UK**	**Denmark**	**Netherlands**	**Finland**	**France**	**Germany**	**Greece**	**Ireland**	**Italy**	**Luxembourg**	**Norway**	**Portugal**	**Spain**	**Sweden**	**Average**
Austria	3.56	2.83	2.89	3.22	2.90	3.29	2.70	2.98	2.32	2.93	2.66	2.95	NA	2.13	2.65	3.53	**2.90**
Belgium	2.95	3.28	2.91	3.18	3.18	3.07	3.07	2.84	2.60	2.93	2.64	2.82	3.18	2.66	2.73	3.23	**2.95**
UK	2.61	2.84	3.29	3.22	3.00	3.18	2.55	2.69	2.34	2.81	2.51	2.58	3.27	2.66	2.31	3.43	**2.83**
Denmark	2.95	3.01	3.13	3.39	3.29	3.30	2.96	2.97	2.56	2.99	2.70	2.86	3.53	2.66	2.73	3.57	**3.04**
Netherlands	2.95	2.90	3.16	3.33	3.28	3.14	2.94	2.90	2.55	3.00	2.77	2.97	3.26	2.70	2.85	3.33	**3.00**
Finland	2.94	2.92	2.98	3.20	3.25	3.69	2.91	2.85	2.42	2.92	2.78	2.94	NA	2.18	2.71	3.49	**2.95**
France	2.62	2.92	2.32	2.86	2.72	2.92	3.18	2.85	2.78	2.81	2.66	2.83	2.93	2.91	2.37	3.04	**2.80**
Germany	3.09	2.75	2.62	3.12	2.84	2.89	2.74	3.50	2.31	2.78	2.63	2.76	2.99	2.54	2.66	3.13	**2.83**
Greece	2.52	2.45	2.54	2.61	2.59	2.68	2.53	2.51	3.21	2.50	2.40	2.53	2.52	2.41	2.47	2.88	**2.58**
Ireland	2.55	2.75	2.61	3.02	2.80	2.92	2.72	2.59	2.55	3.33	2.37	2.55	3.01	2.51	2.57	3.26	**2.76**
Italy	2.43	2.40	2.51	2.53	2.35	2.51	2.43	2.36	2.33	2.65	2.80	2.54	2.65	2.55	2.61	2.81	**2.53**
Luxembourg	3.07	3.30	2.96	3.23	3.29	3.06	3.09	2.99	2.56	2.96	2.62	3.46	3.20	2.71	2.71	3.31	**3.03**
Norway	3.00	2.91	3.06	3.50	3.30	3.48	2.97	2.92	2.40	2.93	2.78	2.91	NA	2.22	2.79	3.65	**2.99**
Portugal	2.50	2.53	2.74	2.67	2.74	2.67	2.59	2.48	2.60	2.65	2.32	2.56	2.60	3.29	2.51	2.97	**2.65**
Spain	2.58	2.59	2.47	2.66	2.64	2.61	2.68	2.66	2.71	2.64	2.64	2.65	2.56	2.59	3.32	2.86	**2.68**
Sweden	3.05	2.99	3.03	3.41	3.34	3.35	2.99	2.99	2.51	2.92	2.89	2.98	NA	2.24	2.84	3.59	**3.01**
Switzerland	3.24	3.16	3.18	3.28	3.26	3.37	3.03	3.25	2.89	3.05	2.85	3.09	NA	2.79	2.79	3.50	**3.12**
Average	**2.86**	**2.85**	**2.85**	**3.08**	**2.99**	**3.07**	**2.83**	**2.84**	**2.57**	**2.87**	**2.65**	**2.82**	**2.98**	**2.57**	**2.68**	**3.27**	**2.86**

Panel B: Average announcement returns by country
The announcement returns are (-2,2) cumulative abnormal returns, defined as the return over the market index of the acquirer home country.

	Acquirer																	Weighted
Target	**Austria**	**Belgium**	**Denmark**	**Finland**	**France**	**Germany**	**Greece**	**Iceland**	**Ireland**	**Italy**	**Netherlands**	**Norway**	**Portugal**	**Spain**	**Sweden**	**Switzerland**	**UK**	**average**
Austria	-0.026	NA	NA	NA	NA	-0.021	NA	NA	NA	-0.008	0.000	NA	NA	-0.006	NA	NA	0.044	**-0.006**
Belgium	NA	0.014	-0.017	-0.013	-0.003	-0.030	-0.004	NA	NA	0.014	-0.048	NA	NA	NA	0.022	0.009	-0.006	**0.003**
Denmark	NA	NA	0.023	NA	0.208	-0.031	NA	NA	NA	NA	0.023	0.201	NA	0.038	-0.003	NA	-0.035	**0.042**
Finland	NA	NA	-0.007	0.018	NA	-0.012	NA	-0.001	-0.014	NA	NA	-0.020	NA	NA	-0.022	0.087	0.004	**0.009**
France	NA	0.072	0.059	NA	0.004	-0.009	NA	-0.054	0.044	0.073	0.020	0.008	NA	-0.017	0.061	-0.010	0.006	**0.011**
Germany	0.021	-0.006	-0.025	-0.028	0.045	0.007	-0.009	0.026	-0.002	0.018	0.076	-0.004	0.022	0.029	0.016	0.017	0.007	**0.010**
Greece	NA	NA	NA	NA	0.009	NA	0.024	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005	**0.021**
Iceland	NA	NA	NA	NA	NA	NA	NA	0.027	NA	NA	NA	NA	NA	NA	0.035	NA	NA	**0.028**
Ireland	NA	NA	NA	NA	NA	0.017	NA	0.000	0.024	0.004	NA	0.137	NA	NA	NA	0.010	0.023	**0.025**
Italy	-0.014	0.017	-0.094	NA	-0.024	-0.018	NA	NA	NA	-0.004	0.015	0.115	NA	0.003	0.005	NA	-0.005	**-0.004**
Netherlands	0.001	-0.002	0.047	0.055	-0.008	-0.051	NA	NA	NA	-0.006	0.013	NA	NA	-0.031	0.012	-0.006	0.004	**0.004**
Norway	NA	0.164	-0.012	-0.028	-0.008	-0.017	NA	0.023	NA	0.023	-0.005	-0.004	NA	NA	0.009	0.066	-0.006	**0.002**
Portugal	NA	NA	NA	NA	0.002	0.038	NA	NA	NA	NA	NA	NA	0.005	0.005	NA	NA	0.021	**0.007**
Spain	NA	NA	NA	NA	-0.004	-0.003	NA	NA	NA	-0.017	0.041	NA	0.046	0.010	0.019	0.002	-0.016	**0.008**
Sweden	0.009	NA	-0.006	-0.006	NA	-0.016	NA	0.027	0.037	-0.186	0.003	-0.028	NA	NA	0.031	0.053	-0.023	**0.005**
Switzerland	0.217	0.026	NA	0.028	NA	0.030	NA	NA	-0.038	-0.019	0.016	NA	NA	NA	0.033	-0.001	0.011	**0.010**
UK	0.035	0.030	0.116	0.035	0.003	-0.024	-0.020	0.072	-0.004	0.036	0.014	0.014	NA	0.024	0.048	0.003	0.014	**0.013**
Weighted average	**0.010**	**0.023**	**0.018**	**0.009**	**0.005**	**-0.004**	**0.021**	**0.031**	**0.004**	**0.004**	**0.016**	**0.018**	**0.013**	**0.007**	**0.022**	**0.006**	**0.012**	**0.010**

4.4.2 Proxies for cultural similarity

In a modified version of the analysis done by Guiso et al. (2007), the impact of several cultural factors on trust is tested.

Language similarity is an obvious candidate for a culture proxy. The percentages of each language spoken in each of the countries are obtained from a special Eurobarometer survey *Europeans and their languages* published in February 2006. For the few countries not included in this survey, the language information is obtained from the CIA World Factbook[2]. A language similarity variable between each pair of countries is constructed by multiplying the percentages of each common language spoken in the countries and summing them together[3].

The main problem with the language similarity variable is that fails to take into account that some languages are so similar that people speaking them can actually mostly understand each other, although speaking a "different language". This is the case for example with Swedish and Norwegian or Spanish and Portuguese. To address this problem, a language family variable is constructed the same way as the language variable. It takes into account the similar background of different languages.

Religion similarity is an equally obvious culture variable. It is constructed in a manner similar to the language similarity variable. The percentages of people belonging to each religion are obtained from the CIA World Factbook.

The standard of living might also function as a proxy for cultural factors and have an impact on trust. Here the standard of living is measured as purchasing power adjusted

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[2] CIA World Factbook is available online at https://www.cia.gov/library/publications/the-world-factbook/

[3] For example in Switzerland 63% of people speak German, 20% French and 7% Italian as their native language. In Austria 96% of people speak German as their native language. Hence the language similarity variable is calculated as 0.63*0.96 = 0.864

GDP per capita. The variable is defined as the relative difference in GDP per capita of the target country to the country trusting. Since it is not obvious how differences in wealth should affect trust, the direction of the difference is controlled for by *target less wealthy* and *source less wealthy* dummies.

As a measure of the level corruption in the sample countries, the relative difference in the Corruption Perception Index[4] (CPI), published by Transparency International, is included in the culture proxy variables. Since the impact of the level of corruption is not very well understood beforehand, similar dummies (*target more corrupt* and *source more corrupt*) as with GDP per capita are used to control for the direction of the difference in corruption.

Same origin of law is included as a dummy variable to test the effect of the similarity of legal systems. Legal systems are divided into four categories, those of English, French, German and Scandinavian origin, as defined by La Porta et al. (1998). The dummy takes the value 1 if both the target of trust and the source of trust belong to the same category. Since the most fundamental difference between legal systems is that between the common law and civil code systems, an additional dummy is included to capture the impact of this division. The dummy takes the value 1 if the two countries both have either a common law or a civil code -based system.

4.4.3 Genetic similarity

As a proxy for the similarity in the appearance of people, genetic distance F_{ST}, as developed by Cavalli-Sforza et al. (1994), is used. This measure is based on the frequency of certain DNA sequences within the indigenous populations. Hence it effectively measures how different the genetic compositions of the two populations are. The genetic distances, as calculated by Cavalli-Sforza et al. are shown in Table 2.

[4] CPI ranks countries by their perceived levels of corruption, as determined by expert assessments and opinion surveys. The index values and information on how the index is compiled can be found at http://www.transparency.org/

Table 2
Genetic distances (Fst)

This table presents the genetic distances as calculated by Cavalli-Sforza et al. (1994). They represent the difference in the genetic composition of the indigenous people in the respective countries.

	Austria	France	Germany	Switzerland	Belgium	Denmark	Netherlands	UK	Iceland	Ireland	Norway	Sweden	Greece	Italy	Portugal	Spain
Austria																
France	38															
Germany	19	27														
Switzerland	12	23	10													
Belgium	16	32	15	14												
Denmark	27	43	16	19	21											
Netherlands	38	32	16	16	12	9										
UK	55	24	22	28	15	21	17									
Iceland	153	146	106	115	78	88	101	76								
Ireland	115	93	84	86	75	68	76	30	99							
Norway	61	56	21	33	24	19	21	25	74	79						
Sweden	80	78	39	55	34	36	41	37	106	94	18					
Greece	86	131	144	148	103	191	199	204	288	289	235	230				
Italy	43	34	38	44	30	72	64	51	143	132	88	95	77			
Portugal	48	48	51	53	31	77	60	46	149	115	73	78	103	44		
Spain	69	39	69	43	42	80	76	47	163	113	97	99	162	61	48	
Finland	77	107	77	112	63	96	123	115	157	223	94	82	150	94	119	159

The motivation for using this variable comes from the fact that according to some studies people tend to trust people similar to them. This applies to cultural similarity, but also similarity in terms of appearance. As DeBruine (2002) shows, similar facial resemblance enhances trust between people. Genetically similar people are likely to look fairly similar, which could potentially facilitate more trust between them.

4.4.4 Level of information

It seems likely that the level of information about a country affects the level of trust towards that country. Unfortunately measuring the level of information is somewhat complicated. Guiso et al. (2007) use press coverage, in addition to geographic distance, as a proxy for information.

In this study the level of information is proxied by geographic distance and the amount of bilateral trade relative to the GDP of the country trusting. The idea behind the GDP variable is that more trade with a country is likely to increase the level of knowledge about the country. Alternatively, it is of course also possible that more information with a country leads to more trade. Data on bilateral trade is obtained from the UN Comtrade database[5].

5. Results

5.1 Data characteristics

A breakdown of the characteristics of the deal data over time is shown in Table 3. No dramatic changes can be seen during the sample period. The proportion of deals with a public target seems to decrease with time during the sample period. This could mean that increasing competition for good takeover targets has lead to a larger proportion of private targets with less information available, after the easy-to-find public targets have been

[5] UN Comtrade database is available online at http://comtrade.un.org/

snapped. The fractions of local and domestic targets have been fairly stable throughout the period, as has the fraction of targets located in positive trust level countries.

Table 3
Data characteristics over time

This table shows the distribution of observations over time. Mean distance is the average distance of the headquarter cities of the target and the acquirer. A transaction is classified local if the distance between headquarter cities is smaller than 150 km. Acquirer size is the market value of the acquirer on the announcement day. Positive trust refers to deals in which the target is located in a country having a positive relative trust level.

	Number of	Mean distance	Mean acquirer size	Fraction of deals			
Year	observations	(km)	(€mm)	Local	Domestic	With public target	Positive trust
1998	194	372	5,257	0.356	0.680	0.505	0.794
1999	264	342	6,813	0.436	0.716	0.606	0.807
2000	349	397	6,795	0.367	0.599	0.461	0.734
2001	203	370	5,861	0.389	0.670	0.458	0.759
2002	152	393	4,269	0.408	0.678	0.447	0.789
2003	151	385	7,608	0.477	0.669	0.497	0.728
2004	198	412	5,090	0.419	0.707	0.404	0.788
2005	314	414	6,100	0.363	0.631	0.350	0.752
2006	371	394	5,870	0.404	0.693	0.323	0.771
Total	**2,196**	**388**	**6,047**	**0.397**	**0.667**	**0.439**	**0.767**

The number of transactions and mean acquirer returns divided by target and acquirer home country are shown in Table 4. Not surprisingly, the United Kingdom accounts for the highest M&A volumes. German companies on average seem to be the worst acquirers in the sample, while Austrian and Italian targets are the only ones yielding negative average returns. However, since the number of deals for many countries is very limited or even zero, drawing generalized conclusions from these figures is somewhat risky.

Table 5 summarizes some data statistics for the whole sample, local versus non-local, domestic versus foreign and positive trust versus negative trust transactions. The p-values are those on the hypothesis that the value of each statistic is different in the respective categories. As might be anticipated, non-local and foreign acquisitions, as well as those in a low trust level target countries, are typically done by larger companies. These statistics correspond to those of Kedia et al. (2008).

Table 4
Geographic split of the observations and acquirer returns

Panel A: Number of observations by country

	Acquirer																	
Target	**Austria**	**Belgium**	**Denmark**	**Finland**	**France**	**Germany**	**Greece**	**Iceland**	**Ireland**	**Italy**	**Netherlands**	**Norway**	**Portugal**	**Spain**	**Sweden**	**Switzerland**	**UK**	**Total**
Austria	8	0	0	0	0	3	0	0	0	3	3	0	0	1	0	0	4	**22**
Belgium	0	22	1	1	12	3	1	0	0	4	1	0	0	0	2	1	7	**55**
Denmark	0	0	22	0	1	1	0	0	0	0	1	6	0	1	5	0	5	**42**
Finland	0	0	1	41	0	3	0	1	1	0	0	2	0	0	8	1	3	**61**
France	0	6	2	0	132	8	0	1	1	13	13	4	0	7	3	6	40	**236**
Germany	4	6	1	5	9	93	1	1	3	11	3	1	2	3	7	11	31	**192**
Greece	0	0	0	0	3	0	37	0	0	0	0	0	0	0	0	0	3	**43**
Iceland	0	0	0	0	0	0	0	5	0	0	0	0	0	0	1	0	0	**6**
Ireland	0	0	0	0	0	1	0	1	13	1	0	1	0	0	0	1	19	**37**
Italy	1	1	1	0	4	8	0	0	0	97	4	1	0	6	3	0	12	**138**
Netherlands	2	4	2	2	9	5	0	0	0	3	40	0	0	4	3	2	15	**91**
Norway	0	1	3	2	3	2	0	3	0	1	5	28	0	0	19	1	7	**75**
Portugal	0	0	0	0	1	1	0	0	0	0	0	0	14	9	0	0	1	**26**
Spain	0	0	0	0	5	3	0	0	0	3	6	0	3	78	1	1	10	**110**
Sweden	1	0	5	13	0	6	0	1	1	1	3	12	0	0	42	1	11	**97**
Switzerland	1	2	0	1	0	6	0	0	1	4	3	0	0	0	1	25	5	**49**
UK	3	7	2	1	17	28	1	5	33	3	13	8	0	6	11	10	768	**916**
Total	**20**	**49**	**40**	**66**	**196**	**171**	**40**	**18**	**53**	**144**	**95**	**63**	**19**	**115**	**106**	**60**	**941**	**2,196**

Panel B: Average announcement returns by country
The announcement returns are (-2,2) cumulative abnormal returns, defined as the return over the market index of the acquirer home country.

	Acquirer																	Weighted
Target	**Austria**	**Belgium**	**Denmark**	**Finland**	**France**	**Germany**	**Greece**	**Iceland**	**Ireland**	**Italy**	**Netherlands**	**Norway**	**Portugal**	**Spain**	**Sweden**	**Switzerland**	**UK**	**average**
Austria	-0.026	NA	NA	NA	NA	-0.021	NA	NA	NA	-0.008	0.000	NA	NA	-0.006	NA	NA	0.044	**-0.006**
Belgium	NA	0.014	-0.017	-0.013	-0.003	-0.030	-0.004	NA	NA	0.014	-0.048	NA	NA	NA	0.022	0.009	-0.006	**0.003**
Denmark	NA	NA	0.023	NA	0.208	-0.031	NA	NA	NA	NA	0.023	0.201	NA	0.038	-0.003	NA	-0.035	**0.042**
Finland	NA	NA	-0.007	0.018	NA	-0.012	NA	-0.001	-0.014	NA	NA	-0.020	NA	NA	-0.022	0.087	0.004	**0.009**
France	NA	0.072	0.059	NA	0.004	-0.009	NA	-0.054	0.044	0.073	0.020	0.008	NA	-0.017	0.061	-0.010	0.006	**0.011**
Germany	0.021	-0.006	-0.025	-0.028	0.045	0.007	-0.009	0.026	-0.002	0.018	0.076	-0.004	0.022	0.029	0.016	0.017	0.007	**0.010**
Greece	NA	NA	NA	NA	0.009	NA	0.024	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005	**0.021**
Iceland	NA	NA	NA	NA	NA	NA	NA	0.027	NA	NA	NA	NA	NA	NA	0.035	NA	NA	**0.028**
Ireland	NA	NA	NA	NA	NA	0.017	NA	0.000	0.024	0.004	NA	0.137	NA	NA	NA	0.010	0.023	**0.025**
Italy	-0.014	0.017	-0.094	NA	-0.024	-0.018	NA	NA	NA	-0.004	0.015	0.115	NA	0.003	0.005	NA	-0.005	**-0.004**
Netherlands	0.001	-0.002	0.047	0.055	-0.008	-0.051	NA	NA	NA	-0.006	0.013	NA	NA	-0.031	0.012	-0.006	0.004	**0.004**
Norway	NA	0.164	-0.012	-0.028	-0.008	-0.017	NA	0.023	NA	0.023	-0.005	-0.004	NA	NA	0.009	0.066	-0.006	**0.002**
Portugal	NA	NA	NA	NA	0.002	0.038	NA	NA	NA	NA	NA	NA	0.005	0.005	NA	NA	0.021	**0.007**
Spain	NA	NA	NA	NA	-0.004	-0.003	NA	NA	NA	-0.017	0.041	NA	0.046	0.010	0.019	0.002	-0.016	**0.008**
Sweden	0.009	NA	-0.006	-0.006	NA	-0.016	NA	0.027	0.037	-0.186	0.003	-0.028	NA	NA	0.031	0.053	-0.023	**0.005**
Switzerland	0.217	0.026	NA	0.028	NA	0.030	NA	NA	-0.038	-0.019	0.016	NA	NA	NA	0.033	-0.001	0.011	**0.010**
UK	0.035	0.030	0.116	0.035	0.003	-0.024	-0.020	0.072	-0.004	0.036	0.014	0.014	NA	0.024	0.048	0.003	0.014	**0.013**
Weighted average	**0.010**	**0.023**	**0.018**	**0.009**	**0.005**	**-0.004**	**0.021**	**0.031**	**0.004**	**0.004**	**0.016**	**0.018**	**0.013**	**0.007**	**0.022**	**0.006**	**0.012**	**0.010**

Table 5
Summary statistics

Panel A: Statistics by distance

A transaction is defined local if the distance between the headquarters of the target and the acquirer is below 150 km. Market values of acquirers and deal values are measured in millions of euros. The p-values are those of a t-test on the hypothesis that the values of the categories differ from each other. Industries are defined based on their 4-digit SIC codes.

		Target			Target		
	Full sample	**Local**	**Non-local**	**p-value**	**Domestic**	**Foreign**	**p-value**
Mean market value of acquirer (€mm)	6,047	4,273	7,214	0.000	4,823	8,500	0.000
Mean relative value of deal	0.442	0.673	0.290	0.000	0.561	0.203	0.000
Fraction of deals							
Using only cash	0.325	0.296	0.344	0.018	0.289	0.398	0.000
Using cash and stock (Hybrid)	0.150	0.171	0.137	0.028	0.168	0.115	0.001
Using only stock	0.156	0.194	0.131	0.000	0.183	0.101	0.000
Unknown consideration	0.369	0.339	0.388	0.020	0.360	0.386	0.246
Fraction of deals							
Within the same industry	0.329	0.304	0.345	0.044	0.310	0.367	0.008
Having a public target	0.439	0.459	0.427	0.140	0.455	0.409	0.043
Fraction of deals in a country with							
Positive trust index	0.767	0.959	0.641	0.000	1.000	0.416	0.000
Number of deals	2,196	872	1,324		1,465	731	

Panel B: Statistics by trust level

Trust values refer to the relative trust values, stripped of fixed country effects. Market values of acquirers and deal values are measured in millions of euros. The p-values are those of a t-test on the hypothesis that the values of the categories differ from each other. Industries are defined based on their 4-digit SIC codes.

		Trust			Trust (foreign only)		
	Full sample	**Positive**	**Negative**	**p-value**	**Positive**	**Negative**	**p-value**
Mean market value of acquirer (€mm)	6,047	5,474	8,417	0.000	9,079	8,417	0.556
Mean relative value of deal	0.442	0.512	0.183	0.005	0.245	0.183	0.705
Fraction of deals							
Using only cash	0.325	0.306	0.408	0.000	0.378	0.408	0.240
Using cash and stock (Hybrid)	0.150	0.165	0.118	0.018	0.126	0.118	0.591
Using only stock	0.156	0.177	0.062	0.000	0.162	0.062	0.000
Unknown consideration	0.369	0.353	0.413	0.024	0.335	0.413	0.002
Fraction of deals							
Within the same industry	0.329	0.310	0.408	0.000	0.302	0.408	0.000
Having a public target	0.439	0.456	0.341	0.000	0.496	0.341	0.000
Number of deals	2,196	1,685	390		278	390	

Rather counterintuitively local companies are more likely to pay in shares, while non-local acquirers seem to pay in cash more frequently. Similarly targets in negative trust level countries are more likely to be paid in cash. A slightly surprising finding is also that local and domestic targets are more likely to be public than non-local and foreign ones. Shares as a method of payment can help to mitigate the risk of the transaction and the problems arising from asymmetric information. Hence they could be assumed to be used more frequently when the target is non-local and located in a negative trust level country. These issues are discussed further in section 5.5.

The correlations of the different variables used in the analysis are shown in Appendix A. As can be seen, several cultural attributes are highly correlated.

5.2 Determinants of trust

As a first step of the analysis to confirm the results obtained by Guiso et al. (2007), a regression analysis is used to test the impact of cultural attributes on the level of trust between countries. This is a much less extensive version of the analysis done by Guiso et al. with a more limited sample and set of variables. The results are shown in Table 6. Largely consistent with earlier findings, they suggest that cultural attributes strongly affect the level of trust.

The impact of distance on trust is negative and statistically significant, which sounds very plausible. Counterintuitively sharing a border seems to decrease trust. Both findings are consistent with the results of Guiso et al. (2007), although in their model the impact of a shared border is not statistically significant as it is here. Same language and same religion seem to have a significant positive effect on trust, as expected.

Table 6
Regression analysis on the determinants of trust

The dependent variable is the trust index as shown in Table 1 A. Fixed country effects means that a full set of dummies for countries trusting and being trusted is included. Sweden is used as the reference point. Distance is the distance between the capitals of the respective countries. Same country is a dummy variable that takes the value 1 when the trust towards the country itself is measured. Share a border is a dummy variable that takes the value 1 if the country trusting and the country being trusted share a border. Language variable is obtained by multiplying the proportions of people speaking each common language in the respective countries and summing them up. Language family and Religion variables are constructed in a manner similar to the Language variable. Genetic distance (Fst) measures the difference in the genetic composition of indigenous populations of the two countries. Common origin of law is a dummy taking the value 1 if the countries share the same legal origin, as defined by La Porta et al (1998). Same common/civil law is a dummy taking the value 1 if both countries have either a common law or a civil code based legal system. Relative GDP difference is the relative difference in purchasing power adjusted GDP per capita relative to the country trusting. Relative CPI difference is the relative difference in CPI index value relative to the country trusting. Trade to GDP is the total bilateral trade between the two countries divided by the GDP of the country trusting.

*, ** and *** mean that the results are significant at the 10%, 5%, and 1% level, respectively. P-values are shown in parentheses.

	Expected sign	Model 1	Model 2	Model 3	Model 4
Distance	-	-0.0001 **	-0.0001 **	-0.0001 **	-0.0001 **
		(0.013)	(0.013)	(0.012)	(0.014)
Same country	+	0.041	0.148		0.030
		(0.833)	(0.432)		(0.876)
Share a border	+	-0.075 **	-0.080 **	-0.075 **	-0.077
		(0.040)	(0.031)	(0.040)	(0.036)
Language	+	0.241 **	0.140	0.257 ***	0.247 **
		(0.032)	(0.169)	(0.003)	(0.028)
Language family	+	-0.019	-0.026	-0.018	
		(0.591)	(0.465)	(0.603)	
Religion	+	0.096	0.104 *	0.097 *	0.092
		(0.106)	(0.080)	(0.096)	(0.116)
Genetic distance Fst	-	0.001 *	0.001 **	0.001 *	0.001 *
		(0.075)	(0.024)	(0.074)	(0.081)
Common origin of law	+	0.030	0.031	0.027	0.025
		(0.424)	(0.416)	(0.434)	(0.495)
Same common/civil law	+	-0.130 **		-0.133 **	-0.133 **
		(0.040)		(0.028)	(0.034)
Target less wealthy * Relative GDP difference	+/-	0.814	0.720	0.810	0.883
		(0.208)	(0.268)	(0.208)	(0.162)
Source less wealthy * Relative GDP difference	+/-	-1.082 ***	-1.086 ***	-1.081 ***	-1.084 ***
		(0.001)	(0.001)	(0.001)	(0.001)
Target more corrupt * Relative CPI difference	+/-	1.207	1.190	1.201	1.306
		(0.176)	(0.186)	(0.177)	(0.134)
Source more corrupt * Relative CPI difference	+/-	-1.078 **	-1.076 **	-1.082 **	-1.139 **
		(0.029)	(0.030)	(0.027)	(0.017)
Trade to GDP	+	0.530	0.606 *	0.501	0.506
		(0.144)	(0.096)	(0.135)	(0.159)
Fixed country effects		Yes	Yes	Yes	Yes
Number of observations		222	222	222	222
R-square		0.868	0.865	0.868	0.868

Unlike expected, genetic distance appears to enhance trust, which would suggest that people trust genetically similar people less. This contradicts the results of Guiso et al. (2007) who report a negative impact of genetic distance on trust. It could be that genetic distance correlates with some relevant variable that is omitted from this model. The model specifications including genetic distance that Guiso et al. use are somewhat different from the ones used here and actually omit several relevant variables that they use in other specifications, such as difference in GDP per capita and similarity of legal origin. Hence the results are not perfectly comparable.

Same origin of the legal system[6], as defined by La Porta et al. (1998) has no significant impact, but curiously a similar common law/civil code basis actually seems to reduce trust. Part of the explanation could be that UK and Ireland, the only common law countries included in the data set, have a fairly modest level of trust towards each other. This is probably due to reasons other than the legal system though.

Difference in the GDP per capita level has a negative impact on trust when the country trusting is less wealthy than the country being trusted. On the other hand, when the source country of trust is wealthier than the target, GDP per capita difference seems to increase trust, although this effect is statistically not very significant. Guiso et al. (2007) do not test whether the direction of the GDP per capita difference matters and they fail to find a statistically significant impact of wealth difference on trust.

Likewise and somewhat surprisingly, difference in the CPI index measuring the level of corruption seems to affect the level of trust negatively when the country trusting is more corrupt than the country being trusted. The impact is reversed, although not statistically significant, when the source country is less corrupt.

These results suggest that nationals of poor countries tend to distrust people in richer countries, whereas the same does not apply to the other direction, perhaps even the contrary. People in countries with a high level of corruption also tend to distrust people in

[6] La Porta et al. (1998) divide legal systems into those of English, French, German and Scandinavian origin

low corruption level countries, while the impact curiously is not mutual. People in low corruption level countries do not appear to distrust people in highly corrupt countries. When interpreting these results it should be kept in mind that the regressions include full sets of country dummies which capture the objective trust levels. Thus the results do not necessarily mean that poor countries would trust rich countries more than they trust other countries, but perhaps that they trust rich countries less than the consensus opinion would suggest. Another problem in interpreting these results is that GDP per capita and the level of corruption might proxy some other cultural factors that are omitted from the model.

Trade to GDP, used as a proxy for the level of information, would also seem to have a positive impact on the level of trust. There is of course a potential problem with causality, since it could equally well be the case that more trust towards a country leads to more trade with it, as suggested by Guiso et al. (2007). Either way, the results suggest that more trade and more trust go hand in hand.

In conclusion, cultural factors do seem to be important in determining the level of trust between countries. The interested reader should refer to Guiso et al. (2007) for a more detailed and more comprehensive analysis on the determinants of trust. Their findings are largely in line with the results obtained here though.

5.3 Univariate analysis on acquirer returns

5.3.1 Impact of distance and trust on acquirer returns

Announcement returns (-2,2) for acquirers divided into buckets by distance to target are shown in Table 7 and Figure 2. A t-test is used to test whether the return of each bucket is above zero. The p-values for the tests are shown in the table. Similarly, Table 8 and Figure 3 show the mean announcement returns for deals divided into buckets by the trust level.

Table 7
Acquirer returns by distance

This table shows the average CAR(-2,2) to acquirers for targets within different geographic distances. The p-value is that of a t-test on the hypothesis that the return is above zero.

Distance (km)	Mean acquirer return	Number of deals	p-value
0 to 25	0.011	462	0.002
25 to 50	0.019	122	0.018
50 to 100	0.018	172	0.001
100 to 150	0.022	116	0.000
150 to 300	0.006	335	0.062
300 to 500	0.009	361	0.024
500 to 1000	0.005	413	0.082
Above 1000	0.013	215	0.004
Total	**0.010**	**2,196**	**0.000**

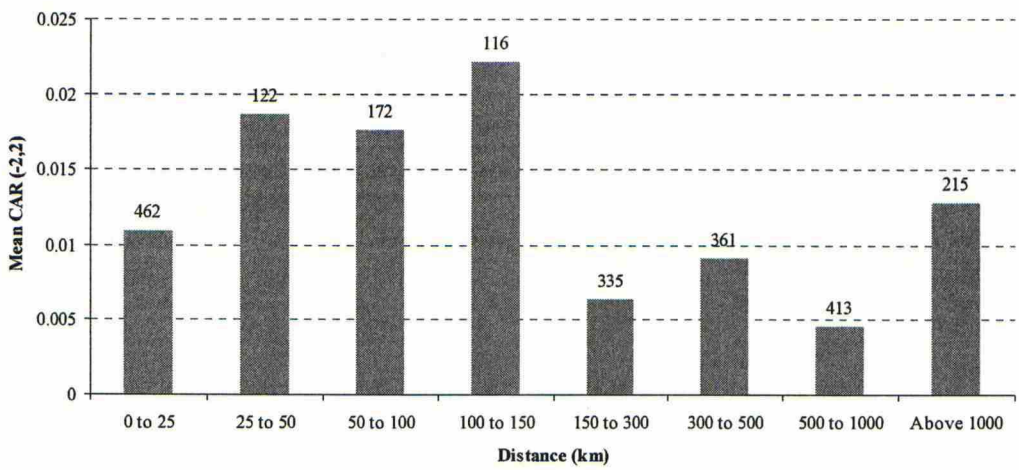

Figure 2. Mean announcement returns by distance. The number on top of each block denotes the number of observations included in the category.

As can be seen in the graphs, both distance and the level of trust seem to have an impact on the average acquirer returns but in neither case does the impact appear to be entirely straightforward. Acquirer returns are lowest in the 150 to 1000 km range, while the

returns from targets in a positive trust level country are roughly in line independent of how strongly positive the trust level is.

Table 8
Acquirer returns by relative trust level

This table shows the average CAR(-2,2) to acquirers for targets in countries with different relative levels of trust from the acquirer country. The p-value is that of a t-test on the hypothesis that the return is above zero. The sample size is slightly smaller than in Table 7, since for a few countries the bilateral trust levels are not available.

Relative trust	Mean acquirer return	Number of deals	p-value
-0.50 to -0.25	0.009	50	0.183
-0.25 to 0.00	0.004	340	0.153
0.00 to 0.25	0.014	353	0.001
0.25 to 0.50	0.012	1,048	0.000
0.50 to 0.75	0.010	155	0.041
0.75 to 1.00	0.013	129	0.005
Total	**0.011**	**2,075**	**0.000**

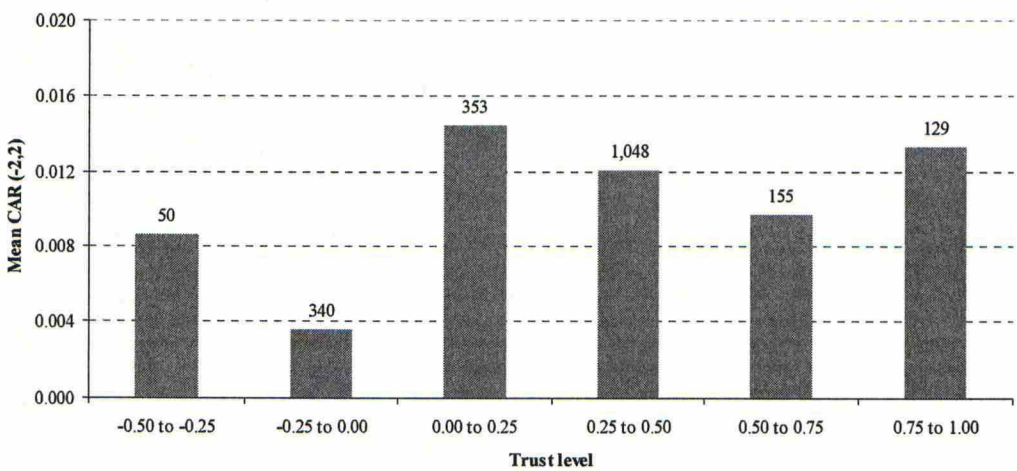

Figure 3. Mean acquirer returns by the level of trust. The number on top of each block denotes the number of observations included in the category.

The volumes of M&A transactions also appear to be distributed unevenly in terms of distance and trust. A very large proportion of the targets are located very near the acquirer. An overwhelming majority of the targets are also located in a country with a positive trust level. The latter could result largely from the fact that all countries have very positive trust levels towards themselves, and a very large proportion of the targets are domestic.

5.3.2 Returns from local vs. non-local targets

Table 9 shows the mean returns for local and non-local transactions, using different definitions for local transactions. The hypothesis that local acquirer returns are higher than those of non-local ones is tested using a t-test. Panel A includes the full sample, while Panel B includes only domestic transactions.

Using any of the potential definitions for local, the results suggest that local acquirers earn on average higher returns, and the difference is statistically significant. In the base-case definition throughout this study, 150 km distance defining local deals, the average return for local acquirers is 1.5%, while it for non-local ones is only 0.8%. These results are consistent with those of Kedia et al. (2008), who found local acquirer returns to be more than twice non-local ones. The results including only domestic deals seem very similar to those of the whole sample. This suggests that local acquirers do not perform better only because they acquire within their home country, but that the better local performance remains even within country borders. These results are also robust to different CAR windows. The tests yield similar conclusions with all CAR windows from (-1,1) to (-4,4).

Table 9
Local vs. non-local acquirer returns

This table shows the average CAR(-2,2) using different definitions for local. The p-values are those of a t-test on the hypothesis that local returns are on average higher than non-local ones.

Panel A: Full sample

Local definition	Mean acquirer return			Number of deals		
(km)	Local	Non-local	p-value	Local	Non-local	Total
150	0.015	0.008	0.016	872	1,324	2,196
75	0.014	0.009	0.088	679	1,517	2,196
100	0.014	0.009	0.077	756	1,440	2,196
125	0.014	0.008	0.037	811	1,385	2,196
175	0.013	0.009	0.118	955	1,241	2,196
200	0.012	0.009	0.159	1,008	1,188	2,196
250	0.012	0.009	0.136	1,092	1,104	2,196

Panel B: Domestic deals only

Local definition	Mean acquirer return			Number of deals		
(km)	Local	Non-local	p-value	Local	Non-local	Total
150	0.015	0.007	0.034	864	601	1,465
75	0.014	0.010	0.151	675	790	1,465
100	0.014	0.009	0.130	750	715	1,465
125	0.014	0.008	0.061	805	660	1,465
175	0.013	0.009	0.220	941	524	1,465
200	0.012	0.010	0.291	992	473	1,465
250	0.012	0.009	0.231	1,067	398	1,465

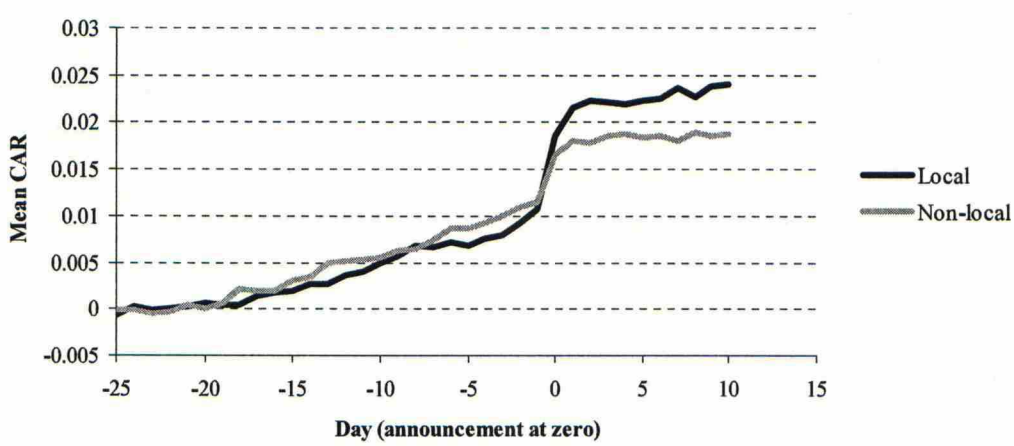

Figure 4. Mean CAR from local vs. non-local deals. The transaction is announced at day zero.

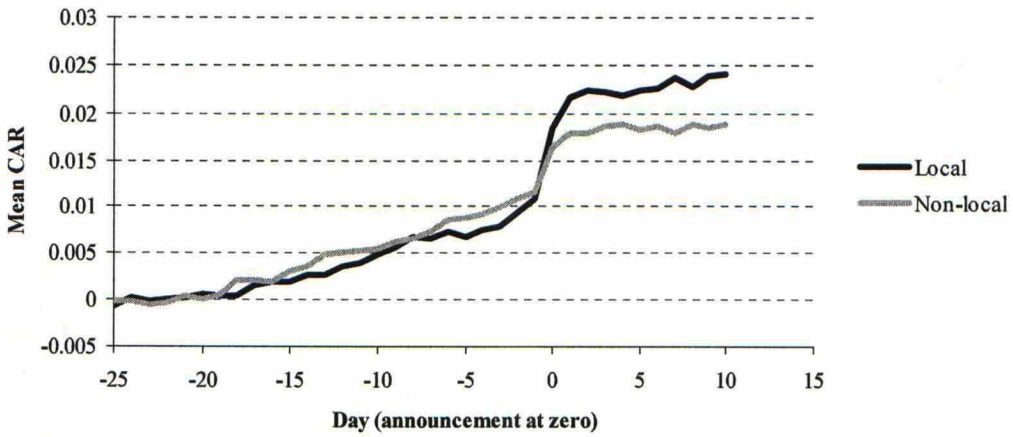

Figure 5. Mean CAR from local vs. non-local deals (domestic deals only). The transaction is announced at day zero. Transactions with foreign targets are excluded from the sample.

Figure 4 shows the average CAR for local vs. non-local deals for the full sample. Figure 5 shows the average CAR for the subsample of domestic deals. The difference between local and non-local deals seems quite clear in both graphs. The stock price run-up before the acquisition seems to be larger for non-local acquirers, suggesting there is more information leakage related to their transactions. A potential explanation could be the acquirer size. As seen in Table 5, non-local acquirers are on average larger, so there might be more analyst coverage and speculation on a potential transaction around them.

The same problem applies to generalizing all these results. They fail to account for several factors other than distance. These problems are addressed and controlled for in the multivariate analyses in section 5.4.

5.3.3 Domestic vs. foreign targets and the impact of trust

Panel A in Table 10 shows the mean returns for domestic and foreign transactions and Panel B for positive and negative trust level countries.

Table 10
Domestic vs. foreign targets and positive vs. negative trust

Panel A: Domestic vs. foreign target

This table shows the CAR(-2,2) for domestic vs. foreign targets. The p-values are those of a t-test on the hypothesis that domestic returns are on average higher than foreign ones.

	Mean acquirer return			Number of deals		
	Domestic	Foreign	p-value	Domestic	Foreign	Total
Full sample	0.011	0.008	0.191	1,465	731	2,196

Panel B: Target country having a positive vs. negative level of trust

This table shows the average CAR(-2,2) for positive vs. negative trust level country targets. The p-values are those of a t-test on the hypothesis that returns from targets in countries with positive trust levels are on average higher than those with negative trust levels.

	Mean acquirer return			Number of deals		
CAR	Positive	Negative	p-value	Positive	Negative	Total
Full sample	0.012	0.004	0.031	1,685	390	2,075
Foreign targets only	0.015	0.004	0.043	278	390	668

The average announcement return for domestic acquirers is 1.1%, while it for foreign ones is 0.8%. This difference is statistically not very significant. Positive trust level seems to be better in explaining the higher acquirer returns than the split to domestic and foreign targets. Acquisitions in countries with a positive relative trust level yield significantly better returns than those in negative trust level countries. This result is statistically significant and remains also when domestic deals are excluded from the sample. The difference in returns is actually even larger with foreign deals only. The results are robust to different CAR windows from (-1,1) to (-4,4) as well.

The situation of domestic vs. foreign deals looks very different when observing a longer period though. Figure 6 that shows the average CAR for domestic versus foreign deals is quite surprising. It suggests that foreign deals actually yield better returns than domestic ones, but the stock price run-up before their announcement is much stronger, which means that effectively a majority of the gains are realized before the actual announcement day. A t-test on the difference of (-25,2) CAR between foreign and domestic deals yields no statistically significant results though.

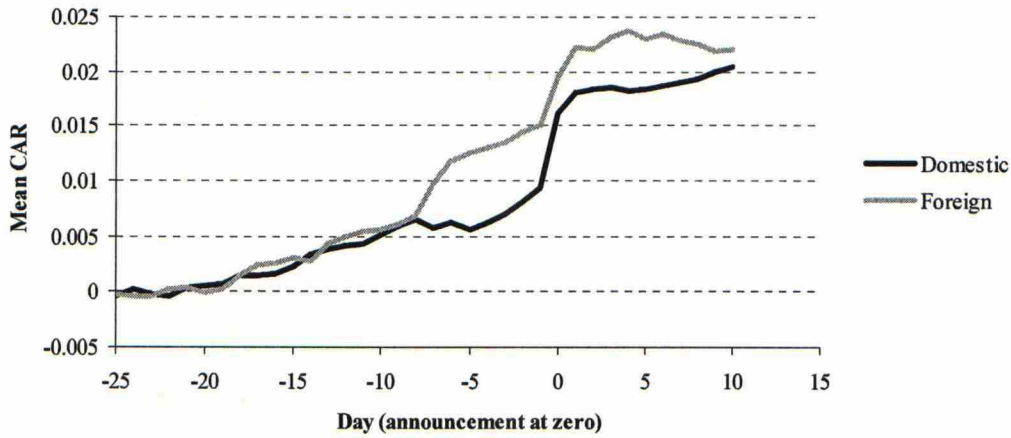

Figure 6. Mean CAR from domestic vs. foreign deals. The transaction is announced at day zero.

In any case the graph suggests there could be a significant amount of either insider trading or merely speculation around foreign transactions. As discussed earlier, acquirer size and the resulting larger analyst and news coverage could be one factor explaining the difference.

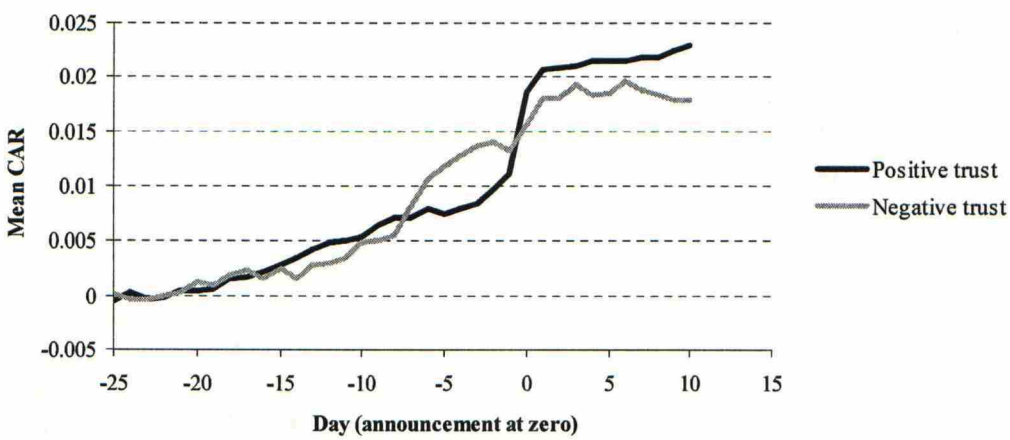

Figure 7. Mean CAR from target in a positive vs. negative trust level country. The transaction is announced at day zero. Transactions with foreign targets are excluded from the sample.

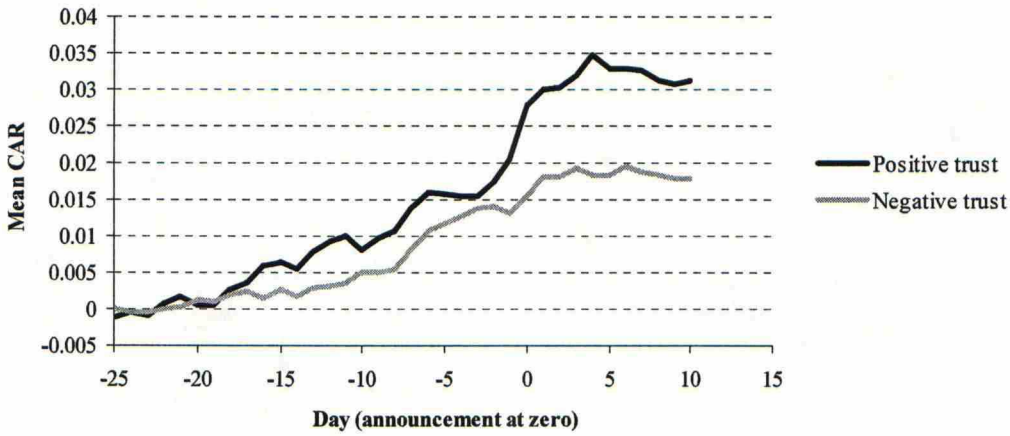

Figure 8. Mean CAR from target in a positive vs. negative trust level country (foreign deals only). The transaction is announced at day zero. Transactions with domestic targets are excluded from the sample.

Figure 7 shows the average CAR for deals with a target in a positive vs. negative relative trust level country for the full sample. Figure 8 shows the mean CAR for the subsample of foreign deals. As in the case of local vs. non-local deals, the difference between positive and negative trust targets is somewhat clear. The stock price run-up before the transaction seems to be larger for deals with a negative trust level target. As already seen in Figure 6, for the subsample of foreign deals most of the abnormal returns seem to have been priced already before the announcement, and the announcement day reaction is fairly modest. This is particularly the case with targets in negative trust level countries.

5.4 Multivariate analysis on acquirer returns

5.4.1 Impact of distance

The results of a regression analysis on the impact of distance on announcement returns to acquirers are shown in Table 11. They provide evidence suggesting that local acquirers earn higher announcement returns. The significance levels do not quite reach the 5% threshold, but are not very far away in some specifications. As can be seen in Table 12,

the results with the subsample of domestic deals are similar to those with the full sample. The significance levels are more modest, probably mostly due to the smaller sample size.

Table 13 shows a regression analysis with models including the natural logarithm of distance as an explaining variable instead of the local dummy. The results provide weak evidence on the negative impact of distance on acquirer returns even when the local/non-local division is replaced with the direct impact of distance. Model 3 in Table 12 suggests that the impact is similar with the subsample of domestic deals as well, although the significance level is poorer. A graphical illustration of the impact of distance on acquirer returns is shown in Appendix B.

The effect of the target being domestic is negative, although not statistically very significant. This contradicts with the univariate result in Table 10. However, since the longer-term CAR before the announcement seems higher for foreign deals, as seen in Figure 6, this result is not that controversial either. It does contradict with some earlier research as well though. For example Goergen and Renneboog (2004) report higher returns from domestic than from foreign acquirers in Europe. On the other hand they do not control for geographic distance, so it could be that their results merely reflect the better performance of local acquirers.

Sharing a border with the target country seems to have a negative impact on acquirer returns as well. The target being located in a capital does not have a statistically significant impact on returns.

Table 14 focuses on the combined impact of distance and target characteristics. Consistent with the results of Kedia et al. (2008), the negative impact of distance is strongest when the target is small and privately owned. This seems to support the hypothesis that information plays a key role in the distance effect, since small private targets are typically the ones with most difficulty in obtaining information. The results are similar for the subsample of domestic deals only, as seen in Table 15.

Table 11
Regression analysis on the impact of distance on acquirer returns

The dependent variable is the (-2,2) acquirer CAR. Local is a dummy variable taking the value 1 if the distance between the headquarters of the target and the acquirer is below 150 km. Domestic is a dummy variable taking the value 1 if the target and the acquirer are headquartered in the same country. Share a border takes the value 1 if the target and acquirer countries share a border. Capital is a dummy variable that takes the value 1 if the target is headquartered in the capital of its home country. Cash takes the value 1 if the consideration is entirely in cash, All share likewise if the consideration is entirely in shares. Hybrid takes the value 1 if the consideration includes both cash and shares. Unknown consideration takes the value 1 if the form of consideration is not disclosed. Relative deal size is the deal consideration divided by the market value of the acquirer. Acquirer size is the market value of the acquirer. Natural logarithms of both size variables are used in this analysis. Public is a dummy variable that takes the value 1 if the target is a public company. Same industry is a dummy variable taking the value 1 if the target and the acquirer have the same 4-digit SIC code. Iceland is a dummy variable that takes the value 1 if either the target or the acquirer (but not both) is located in Iceland. Same legal origin is a dummy variable that takes the value 1 if the target and the acquirer have the same origin of legal system.

*, ** and *** mean that the results are significant at the 10%, 5%, and 1% level, respectively. P-values are shown in parentheses.

	Expected sign	Model 1	Model 2	Model 3	Model 4
Local	+	0.004	0.007 *	0.005	0.008 *
		(0.222)	(0.094)	(0.143)	(0.063)
Domestic	+		-0.008		-0.008
			(0.165)		(0.131)
Share a border	+			-0.012 *	
				(0.068)	
Capital	+ / -				-0.004
					(0.336)
Cash	+	0.003	0.002	0.002	0.002
		(0.610)	(0.668)	(0.644)	(0.709)
All share	-	0.002	0.002	0.001	0.002
		(0.779)	(0.786)	(0.860)	(0.765)
Unknown consideration	+ / -	0.003	0.003	0.002	0.003
		(0.577)	(0.592)	(0.630)	(0.610)
ln Relative deal size	+ / -	0.002	0.002	0.002	0.002 *
		(0.107)	(0.113)	(0.106)	(0.099)
ln Acquirer size	-	-0.002 *	-0.002 *	-0.002 *	-0.002 *
		(0.074)	(0.058)	(0.066)	(0.072)
Public	-	-0.019 ***	-0.019 ***	-0.019 ***	-0.019 ***
		(0.000)	(0.000)	(0.000)	(0.000)
Same industry	+	-0.004	-0.004	-0.004	-0.004
		(0.296)	(0.275)	(0.301)	(0.275)
Iceland	+ / -	0.025	0.023	0.019	0.023
		(0.221)	(0.268)	(0.360)	(0.266)
Same legal origin	+	0.002	0.007	0.010	0.008
		(0.644)	(0.214)	(0.112)	(0.195)
Year dummies		Yes	Yes	Yes	Yes
Number of observations		2,196	2,196	2,196	2,196
R-square		0.032	0.033	0.033	0.033

Table 12
Regression analysis on the impact of distance on acquirer returns (domestic only)

The dependent variable is the (-2,2) acquirer CAR. Local is a dummy variable taking the value 1 if the distance between the headquarters of the target and the acquirer is below 150 km. Domestic is a dummy variable taking the value 1 if the target and the acquirer are headquartered in the same country. Share a border takes the value 1 if the target and acquirer countries share a border. Capital is a dummy variable that takes the value 1 if the target is headquartered in the capital of its home country. Cash takes the value 1 if the consideration is entirely in cash, All share likewise if the consideration is entirely in shares. Hybrid takes the value 1 if the consideration includes both cash and shares. Unknown consideration takes the value 1 if the form of consideration is not disclosed. Relative deal size is the deal consideration divided by the market value of the acquirer. Acquirer size is the market value of the acquirer. Natural logarithms of both size variables are used in this analysis. Public is a dummy variable that takes the value 1 if the target is a public company. Same industry is a dummy variable taking the value 1 if the target and the acquirer have the same 4-digit SIC code. Iceland is a dummy variable that takes the value 1 if either the target or the acquirer (but not both) is located in Iceland. Same legal origin is a dummy variable that takes the value 1 if the target and the acquirer have the same origin of legal system.

*, ** and *** mean that the results are significant at the 10%, 5%, and 1% level, respectively. P-values are shown in parentheses.

	Expected sign	Model 1		Model 2		Model 3	
Local	+	0.006		0.006			
		(0.149)		(0.137)			
ln Distance	-					-0.001	
						(0.267)	
Capital	+ / -			-0.002		-0.003	
				(0.709)		(0.563)	
Cash	+	0.003		0.003		0.003	
		(0.592)		(0.603)		(0.595)	
All share	-	0.005		0.005		0.005	
		(0.459)		(0.449)		(0.487)	
Unknown consideration	+ / -	0.001		0.001		0.001	
		(0.841)		(0.841)		(0.858)	
ln Relative deal size	+ / -	0.003	**	0.003	**	0.003	**
		(0.049)		(0.046)		(0.046)	
ln Acquirer size	-	-0.001		-0.001		-0.001	
		(0.508)		(0.528)		(0.491)	
Public	-	-0.025	***	-0.025	***	-0.025	***
		(0.000)		(0.000)		(0.000)	
Same industry	+ / -	-0.004		-0.004		-0.004	
		(0.341)		(0.341)		(0.312)	
Year dummies		Yes		Yes		Yes	
Number of observations		1,465		1,465		1,465	
R-square		0.034		0.034		0.034	

Table 13
Regression analysis on the direct impact of distance

The dependent variable is the (-2,2) acquirer CAR. Domestic is a dummy variable taking the value 1 if the target and the acquirer are headquartered in the same country. Share a border takes the value 1 if the target and acquirer countries share a border. Capital is a dummy variable that takes the value 1 if the target is headquartered in the capital of its home country. Cash takes the value 1 if the consideration is entirely in cash, All share likewise if the consideration is entirely in shares. Hybrid takes the value 1 if the consideration includes both cash and shares. Unknown consideration takes the value 1 if the form of consideration is not disclosed. Relative deal size is the deal consideration divided by the market value of the acquirer. Acquirer size is the market value of the acquirer. Natural logarithms of both size variables are used in this analysis. Public is a dummy variable that takes the value 1 if the target is a public company. Same industry is a dummy variable taking the value 1 if the target and the acquirer have the same 4-digit SIC code. Iceland is a dummy variable that takes the value 1 if either the target or the acquirer (but not both) is located in Iceland. Same legal origin is a dummy variable that takes the value 1 if the target and the acquirer have the same origin of legal system.

*, ** and *** mean that the results are significant at the 10%, 5%, and 1% level, respectively. P-values are shown in parentheses.

	Expected sign	Model 1		Model 2	
ln Distance	-	-0.001		-0.001	
		(0.192)		(0.161)	
Domestic	+	-0.007		-0.005	
		(0.192)		(0.392)	
Share a border	+			-0.010	
				(0.126)	
Capital	+ / -	-0.004		-0.004	
		(0.287)		(0.292)	
Cash	+	0.002		0.002	
		(0.699)		(0.710)	
All share	-	0.001		0.001	
		(0.810)		(0.885)	
Unknown consideration	+ / -	0.002		0.002	
		(0.624)		(0.665)	
ln Relative deal size	+ / -	0.002	*	0.002	*
		(0.096)		(0.094)	
ln Acquirer size	-	-0.002	*	-0.002	*
		(0.064)		(0.063)	
Public	-	-0.019	***	-0.019	***
		(0.000)		(0.000)	
Same industry	+	-0.004		-0.004	
		(0.256)		(0.266)	
Iceland	+ / -	0.024		0.020	
		(0.243)		(0.346)	
Same legal origin	+ / -	0.007		0.012	*
		(0.208)		(0.065)	
Year dummies		Yes		Yes	
N		2,196		2,196	
R-square		0.032		0.033	

Table 14
Regression analysis on distance and target characteristics

The dependent variable is the (-2,2) acquirer CAR. Local is a dummy variable taking the value 1 if the distance between the headquarters of the target and the acquirer is below 150 km. Same industry is a dummy variable taking the value 1 if the target and the acquirer have the same 4-digit SIC code. Public is a dummy variable that takes the value 1 if the target is a public company. Small is a dummy variable that takes the value 1 if the deal size is in the smallest quarter of the data set. Likewise, Large takes the value of 1 if the deal belongs to the largest quarter of the data set. Capital is a dummy variable that takes the value 1 if the target is headquartered in the capital of its home country. The control variables incorporated in all models are not shown in the table for clarity. They include: Same industry, Public, ln Acquirer size, ln Relative deal size, Cash, All share, Unknown consideration, Iceland (acquirer or target but not both in Iceland) and Same legal origin.

*, ** and *** mean that the results are significant at the 10%, 5%, and 1% significance level, respectively. P-values are shown in parentheses.

	Expected sign	Model 1	Model 2	Model 3	Model 4
Same industry	+ / -	-0.005 (0.279)			
Local * Same industry	+ / -	0.009 (0.179)			
Local * Different industry	+ / -	0.006 (0.198)			
Public	-		-0.016 *** (0.001)		
Local * Public	+ / -		0.002 (0.659)		
Local * Private	+		0.010 ** (0.041)		
Small	+ / -			-0.010 * (0.076)	
Local * Small	+			0.010 (0.135)	
Local * Large	+ / -			-0.001 (0.928)	
Capital	+ / -				-0.005 (0.318)
Local * Capital	+ / -				0.010 (0.130)
Local * Not capital	+				0.007 (0.150)
Domestic	+	-0.008 (0.165)	-0.008 (0.165)	-0.005 (0.338)	-0.009 (0.120)
Year dummies		Yes	Yes	Yes	Yes
Control variables		Yes	Yes	Yes	Yes
Number of observations		2,196	2,196	2,196	2,196
R-square		0.033	0.033	0.033	0.033

Table 15
Regression analysis on distance and target characteristics (domestic only)

The dependent variable is the (-2,2) acquirer CAR. Local is a dummy variable taking the value 1 if the distance between the headquarters of the target and the acquirer is below 150 km. Same industry is a dummy variable taking the value 1 if the target and the acquirer have the same 4-digit SIC code. Public is a dummy variable that takes the value 1 if the target is a public company. Small is a dummy variable that takes the value 1 if the deal size is in the smallest quarter of the data set. Likewise, Large takes the value of 1 if the deal belongs to the largest quarter of the data set. Capital is a dummy variable that takes the value 1 if the target is headquartered in the capital of its home country. The control variables incorporated in all models are not shown in the table for clarity. They include: Same industry, Public, ln Acquirer size, ln Relative deal size, Cash, All share, Unknown consideration, Iceland (acquirer or target but not both in Iceland) and Same legal origin.

*, ** and *** mean that the results are significant at the 10%, 5%, and 1% significance level, respectively. P-values are shown in parentheses.

	Expected sign	Model 1	Model 2	Model 3	Model 4
Same industry	+ / -	-0.006 (0.400)			
Local * Same industry	+ / -	0.008 (0.292)			
Local * Different industry	+ / -	0.005 (0.301)			
Public	-		-0.019 *** (0.005)		
Local * Public	+ / -		0.001 (0.899)		
Local * Private	+		0.010 * (0.066)		
Small	+ / -			-0.011 (0.128)	
Local * Small	+			0.013 * (0.092)	
Local * Large	+ / -			-0.005 (0.466)	
Capital	+ / -				-0.002 (0.857)
Local * Capital	+ / -				0.006 (0.482)
Local * Not capital	+				0.006 (0.190)
Year dummies		Yes	Yes	Yes	Yes
Control variables		Yes	Yes	Yes	Yes
Number of observations		1,465	1,465	1,465	1,465
R-square		0.034	0.035	0.035	0.034

Kedia et al. (2008) also find that the impact of distance is strong when the target is located in a non-metro area. The analysis done here does not provide strong evidence to support this, since the impact of distance seems to be roughly the same independent of whether the target is located in a capital city or not. For the subsample of domestic deals there is weak support for proximity being more important when the target is not located in a capital.

5.4.2 Impact of trust

Table 16 shows the results for regressions including the level of trust towards the target country as an additional variable. The results suggest that trust does have some additional explanatory power on acquirer returns. In fact, it appears to be better in explaining the higher returns than the local variable. The impact of trust is positive and statistically significant on the 10% level. The impact of the target being local still seems to remain positive, although the statistical significance does not quite reach the 10% level. The impact of the target being domestic remains negative. Table 17 shows that the results are very similar for the subsample of foreign targets.

The regression analysis on trust and target characteristics, shown in Table 18, suggests that the impact of positive trust level is particularly strong when the target is non-local, privately owned and not located in a capital city. The importance of trust also appears to be larger when the target is within the same industry. The impact of being local generally remains positive. The results for the subsample of foreign targets, shown in Table 19, are in line with those of the full sample. The importance of trust when acquiring same industry targets is even stronger in cross-border acquisitions.

These results would largely seem to support the hypothesis of an information advantage related to positive trust level countries. Geographically distant private companies located outside capitals are likely to be the ones with most difficulty in information acquisition. Since the results remain similar even when domestic targets are excluded, this effect cannot merely reflect the impact of geographic proximity.

Table 16
Regression analysis on the impact of trust on acquirer returns

The dependent variable is the (-2,2) acquirer CAR. Positive trust is a dummy variable that takes the value 1 if the level of trust (as shown in Table X) from the acquirer country towards the target country is positive. Local is a dummy variable taking the value 1 if the distance between the headquarters of the target and the acquirer is below 150 km. Domestic is a dummy variable taking the value 1 if the target and the acquirer are headquartered in the same country. Share a border takes the value 1 if the target and acquirer countries share a border. Capital is a dummy variable that takes the value 1 if the target is headquartered in the capital of its home country. Cash takes the value 1 if the consideration is entirely in cash, All share likewise if the consideration is entirely in shares. Hybrid takes the value 1 if the consideration includes both cash and shares. Unknown consideration takes the value 1 if the form of consideration is not disclosed. Relative deal size is the deal consideration divided by the market value of the acquirer. Acquirer size is the market value of the acquirer. Natural logarithms of both size variables are used in this analysis. Public is a dummy variable that takes the value 1 if the target is a public company. Same industry is a dummy variable taking the value 1 if the target and the acquirer have the same 4-digit SIC code. Iceland is a dummy variable that takes the value 1 if either the target or the acquirer (but not both) is located in Iceland. Same legal origin is a dummy variable that takes the value 1 if the target and the acquirer have the same origin of legal system.

*, ** and *** mean that the results are significant at the 10%, 5%, and 1% level, respectively. P-values are shown in parentheses.

	Expected sign	Model 1	Model 2	Model 3	Model 4
Positive trust	+	0.011 *	0.011 *	0.006	0.011 *
		(0.079)	(0.078)	(0.309)	(0.075)
Local	+		0.006	0.003	0.007
			(0.157)	(0.380)	(0.108)
Domestic	+	-0.011 *	-0.014 **		-0.015 **
		(0.070)	(0.028)		(0.021)
Share a border	+			-0.011 *	
				(0.095)	
Capital	+ / -				-0.004
					(0.337)
Cash	+	0.002	0.002	0.002	0.001
		(0.762)	(0.771)	(0.729)	(0.813)
All share	-	0.002	0.002	0.002	0.002
		(0.710)	(0.728)	(0.761)	(0.707)
Unknown consideration	+ / -	0.002	0.002	0.002	0.002
		(0.670)	(0.656)	(0.697)	(0.675)
ln Relative deal size	+ / -	0.002 *	0.002 *	0.002 *	0.002 *
		(0.067)	(0.073)	(0.064)	(0.062)
ln Acquirer size	-	-0.002 *	-0.002	-0.002	-0.002
		(0.086)	(0.101)	(0.130)	(0.124)
Public	-	-0.022 ***	-0.022 ***	-0.021 ***	-0.021 ***
		(0.000)	(0.000)	(0.000)	(0.000)
Same industry	+	-0.005	-0.005	-0.005	-0.005
		(0.200)	(0.206)	(0.209)	(0.210)
Same legal origin	+ / -	0.008	0.008	0.008	0.008
		(0.226)	(0.232)	(0.260)	(0.214)
Year dummies		Yes	Yes	Yes	Yes
Number of observations		2,075	2,075	2,075	2,075
R-square		0.035	0.036	0.035	0.036

Table 17
Regression analysis on the impact of trust on acquirer returns (foreign only)

The dependent variable is the (-2,2) acquirer CAR. Positive trust is a dummy variable that takes the value 1 if the level of trust (as shown in Table X) from the acquirer country towards the target country is positive. Local is a dummy variable taking the value 1 if the distance between the headquarters of the target and the acquirer is below 150 km. Domestic is a dummy variable taking the value 1 if the target and the acquirer are headquartered in the same country. Share a border takes the value 1 if the target and acquirer countries share a border. Capital is a dummy variable that takes the value 1 if the target is headquartered in the capital of its home country. Cash takes the value 1 if the consideration is entirely in cash, All share likewise if the consideration is entirely in shares. Hybrid takes the value 1 if the consideration includes both cash and shares. Unknown consideration takes the value 1 if the form of consideration is not disclosed. Relative deal size is the deal consideration divided by the market value of the acquirer. Acquirer size is the market value of the acquirer. Natural logarithms of both size variables are used in this analysis. Public is a dummy variable that takes the value 1 if the target is a public company. Same industry is a dummy variable taking the value 1 if the target and the acquirer have the same 4-digit SIC code. Iceland is a dummy variable that takes the value 1 if either the target or the acquirer (but not both) is located in Iceland. Same legal origin is a dummy variable that takes the value 1 if the target and the acquirer have the same origin of legal system.

*, ** and *** mean that the results are significant at the 10%, 5%, and 1% level, respectively. P-values are shown in parentheses.

	Expected sign	Model 1	Model 2	Model 3	Model 4
Positive trust	+	0.011 *	0.011 *	0.010	0.011 *
		(0.081)	(0.084)	(0.103)	(0.078)
Local	+		0.043	0.046	0.043
			(0.181)	(0.155)	(0.177)
Share a border	+			-0.009	
				(0.217)	
Capital	+ / -				-0.006
					(0.389)
Cash	+	-0.002	-0.002	-0.003	-0.003
		(0.829)	(0.821)	(0.780)	(0.760)
All share	-	-0.014	-0.013	-0.015	-0.014
		(0.272)	(0.308)	(0.253)	(0.299)
Unknown consideration	+ / -	0.003	0.003	0.002	0.003
		(0.741)	(0.739)	(0.824)	(0.795)
ln Relative deal size	+ / -	0.000	0.000	0.000	0.000
		(0.907)	(0.877)	(0.891)	(0.933)
ln Acquirer size	-	-0.004 **	-0.004 *	-0.004 **	-0.004 *
		(0.048)	(0.052)	(0.049)	(0.068)
Public	-	-0.011	-0.011	-0.011	-0.011
		(0.164)	(0.150)	(0.170)	(0.164)
Same industry	+ / -	-0.003	-0.004	-0.004	-0.004
		(0.634)	(0.542)	(0.551)	(0.571)
Same legal origin	+	0.008	0.007	0.012	0.008
		(0.207)	(0.256)	(0.113)	(0.229)
Year dummies		Yes	Yes	Yes	Yes
Number of observations		668	668	668	668
R-square		0.053	0.056	0.058	0.057

Table 18
Regression analysis on trust and target characteristics

The dependent variable is the (-2,2) acquirer CAR. Local is a dummy variable taking the value 1 if the distance between the headquarters of the target and the acquirer is below 150 km. Positive trust is a dummy variable that takes the value 1 if the trust level (as shown in Table X) of the acquirer country towards the target country is positive. Public is a dummy variable that takes the value 1 if the target is a public company. Small is a dummy variable that takes the value 1 if the deal size is in the smallest quarter of the data set. Likewise, Large takes the value of 1 if the deal belongs to the largest quarter of the data set. Capital is a dummy variable that takes the value 1 if the target is headquartered in the capital of its home country. Same industry is a dummy variable taking the value 1 if the target and the acquirer have the same 4-digit SIC code.The control variables incorporated in all models are not shown in the table to make it more readable. They include: Same industry, Public, ln Acquirer size, ln Relative deal size, Cash, All share, Unknown consideration and Same legal origin.

*, ** and *** mean that the results are significant at the 10%, 5%, and 1% significance level, respectively. P-values are shown in parentheses.

	Expected sign	Model 1	Model 2	Model 3	Model 4	Model 5
Local	+	0.075 *	0.006	0.006	0.007 *	0.006
		(0.097)	(0.159)	(0.158)	(0.089)	(0.156)
Positive trust * Local	+ / -	-0.058				
		(0.202)				
Positive trust * Non-local	+	0.012 *				
		(0.063)				
Public	-		-0.014			
			(0.102)			
Positive trust * Public	+ / -		0.005			
			(0.534)			
Positive trust * Private	+		0.014 **			
			(0.045)			
Small	+ / -			-0.011		
				(0.235)		
Positive trust * Small	+			0.006		
				(0.551)		
Positive trust * Large	+ / -			0.007		
				(0.276)		
Capital	+ / -				0.003	
					(0.698)	
Positive trust * Capital	+ / -				0.005	
					(0.582)	
Positive trust * Not capital	+				0.014 **	
					(0.046)	
Same industry	+					-0.009
						(0.275)
Positive trust * Same industry	+ / -					0.014 *
						(0.088)
Positive trust * Different industry	+					0.009
						(0.206)
Domestic	+	-0.014 **	-0.015 **	-0.011 *	-0.015 **	-0.014 **
		(0.036)	(0.025)	(0.080)	(0.019)	(0.028)
Year dummies		Yes	Yes	Yes	Yes	Yes
Control variables		Yes	Yes	Yes	Yes	Yes
Number of observations		2,075	2,075	2,075	2,075	2,075
R-square		0.037	0.036	0.036	0.037	0.036

Table 19
Regression analysis on trust and target characteristics (foreign only)

The dependent variable is the (-2,2) acquirer CAR. Local is a dummy variable taking the value 1 if the distance between the headquarters of the target and the acquirer is below 150 km. Positive trust is a dummy variable that takes the value 1 if the trust level (as shown in Table X) of the acquirer country towards the target country is positive. Public is a dummy variable that takes the value 1 if the target is a public company. Small is a dummy variable that takes the value 1 if the deal size is in the smallest quarter of the data set. Likewise, Large takes the value of 1 if the deal belongs to the largest quarter of the data set. Capital is a dummy variable that takes the value 1 if the target is headquartered in the capital of its home country. Same industry is a dummy variable taking the value 1 if the target and the acquirer have the same 4-digit SIC code.The control variables incorporated in all models are not shown in the table to make it more readable. They include: Same industry, Public, ln Acquirer size, ln Relative deal size, Cash, All share, Unknown consideration and Same legal origin.

*, ** and *** mean that the results are significant at the 10%, 5%, and 1% significance level, respectively. P-values are shown in parentheses.

	Expected sign	Model 1	Model 2	Model 3	Model 4	Model 5
Local	+	0.071	0.043	0.042	0.049	0.041
		(0.116)	(0.183)	(0.192)	(0.126)	(0.208)
Positive trust * Local	+ / -	-0.044				
		(0.482)				
Positive trust * Non-local	+	0.012 *				
		(0.071)				
Public	-		-0.008			
			(0.409)			
Positive trust * Public	+ / -		0.007			
			(0.496)			
Positive trust * Private	+		0.014 *			
			(0.088)			
Small	+ / -			-0.013		
				(0.182)		
Positive trust * Small	+			0.009		
				(0.484)		
Positive trust * Large	+ / -			0.006		
				(0.562)		
Capital	+ / -				0.005	
					(0.566)	
Positive trust * Capital	+ / -				-0.005	
					(0.616)	
Positive trust * Not capital	+				0.019 **	
					(0.012)	
Same industry	+					-0.010
						(0.224)
Positive trust * Same industry	+ / -					0.021 **
						(0.046)
Positive trust * Different industry	+					0.006
						(0.459)
Year dummies		Yes	Yes	Yes	Yes	Yes
Control variables		Yes	Yes	Yes	Yes	Yes
Number of observations		668	668	668	668	668
R-square		0.057	0.056	0.054	0.062	0.058

The apparently high importance of trust when acquiring within the same industry is somewhat surprising. If trust is assumed to mitigate the perceived risk and enhance obtaining information, it could be assumed more important when acquiring outside the acquirer's own industry. Most companies should know their own industry better than other industries, so the perceived risk should be higher when moving into new industries. A potential explanation could be that relative trust can predict implementation difficulties, and that deals within the same industry require a higher level of integration than those in a different industry.

The results could perhaps also be partly due to the competition-reducing effect of a local acquisition within the same industry. However, this explanation is slightly problematic since the regression analysis on distance and target characteristics in Table 14 does not provide convincing evidence to support it.

5.4.3 Control variables

Although the method of payment has been shown to impact acquirer returns in several studies (see e.g. Travlos, 1987), the results obtained here fail to confirm these earlier results. The statistical significance of the consideration variables remains poor in all regression models. The method of payment is controlled for by a cash dummy and an all share dummy, the former taking the value of one if the consideration is in cash, and the latter if the consideration consists of shares only. For some of the deals the form of consideration is not known, and hence an unknown consideration dummy is added.

The characteristics of the target firm have also been shown to impact acquirer returns. Fuller et al. (2002), for example, show that acquirer returns from public targets are significantly lower than those from private targets. The results of this study are consistent with the prior research, and public targets yield significantly lower acquirer returns.

The industry impact is controlled for using a related industry dummy. It takes the value one if the target and the acquirer have the same 4-digit SIC code, and zero otherwise. If

anything, the impact of the target being in the same industry seems to be slightly negative. Earlier research has suggested that different industries might be experiencing different market conditions, affecting the acquirer returns. This has been empirically shown by e.g. Mitchell and Mulherin (1996). Naturally the relatedness of the industry could also affect the synergy potential.

The size of the acquirer, measured as market capitalization, seems to have an adverse impact on acquisition performance. This is consistent with prior research that has reported larger acquirers showing poorer acquisition performance than smaller ones (see e.g. Moeller et al. 2004). The relative size of the transaction, defined as the deal value divided by the market value of the acquirer, is also included as a variable. This is done to mitigate problems in the measurement of announcement returns in case the acquirer is very large and the deal fairly small (see e.g. Eckbo and Thorburn, 2000).

Similar legal origin seems to have a positive, if any, impact on acquirer returns. To test its impact, a same origin of law dummy is included. Western European legal systems are divided into four categories, those of English, French, German and Scandinavian origin, as defined by La Porta et al. (1998). The dummy takes the value 1 if the legal systems of the target and the acquirer countries share the same legal origin. The significance levels obtained here are not very high, but suggest a potentially positive impact.

Since this study focuses on the role of geographic distance, Iceland represents a potential problem, since it is located on an outlying island very far away from other countries. To control for this, an Iceland dummy is included. It takes the value one if either the target or the acquirer (but not both) is located in Iceland. In the regression results the Iceland dummy does not have a statistically significant impact.

The effect of market timing is controlled for by using year dummies for each year. Market reactions to acquisition announcements have been shown to vary during different periods and market conditions. Rhodes-Kropf and Viswanathan (2004) hypothesize that firm-specific and market-wide misvaluations lead to value destroying mergers. Bouwman

et al. (2007) find empirical evidence that market reactions during booms indeed differ from those during depressions. Acquirers during high-valuation markets have higher announcement returns but poorer long run stock and operating performance.

5.5 Logit regressions on distance, trust and deal characteristics

The partly surprising findings in Table 5 seem to warrant taking a closer look at the determinants of deal characteristics. This is done by using logit regressions to test for the impact of proximity and trust level, among other variables, on the choice of payment method and the probabilities of a public target and a same industry target. Table 20 shows a logit regression analysis on distance and deal characteristics, while Table 21 shows the same analysis for foreign targets using positive trust as an explaining variable.

A domestic target strongly reduces the probability of a payment in cash, while a local target seems to have a weaker opposite effect. A shared border increases the use of cash, while a target located in a capital reduces it. In the full sample public targets appear significantly more likely to be paid for in shares, while in the subsample of foreign targets there is no statistically significant impact. Same legal origin also increases the probability of a payment in shares. The impact is statistically significant with the full sample and weaker with foreign deals only.

Positive trust level increases the use of shares as the payment medium. This is consistent with the statistics in Table 5 and still somewhat counterintuitive. As mentioned earlier, using shares for payment helps mitigate the perceived risk and the problems arising from information asymmetry. In this setting shares could be assumed to be used more frequently when the perceived risk and information asymmetry is higher, which most plausibly should be the case with non-local targets in countries with a low level of trust.

Table 20
Logit regressions on distance and deal characteristics

The dependent variable for each regression is shown in the table. In the consideration analysis, only deals paid fully in cash or fully in shares are included. Local is a dummy variable taking the value 1 if the distance between the headquarters of the target and the acquirer is below 150 km. Domestic is a dummy variable taking the value 1 if the target and the acquirer are headquartered in the same country. Share a border takes the value 1 if the target and acquirer countries share a border. Capital is a dummy variable that takes the value 1 if the target is headquartered in the capital of its home country. Cash takes the value 1 if the consideration is entirely in cash, All share likewise if the consideration is entirely in shares. Hybrid takes the value 1 if the consideration includes both cash and shares. Unknown consideration takes the value 1 if the form of consideration is not disclosed. Relative deal size is the deal consideration divided by the market value of the acquirer. Acquirer size is the market value of the acquirer. Natural logarithms of both size variables are used in this analysis. Public is a dummy variable that takes the value 1 if the target is a public company. Same industry is a dummy variable taking the value 1 if the target and the acquirer have the same 4-digit SIC code. Same legal origin is a dummy variable that takes the value 1 if the target and the acquirer have the same origin of legal system.

*, ** and *** mean that the results are significant at the 10%, 5%, and 1% level, respectively. P-values are shown in parentheses.

	Consideration		Industry		Public status	
Dependent dummy variable	Cash		Same industry		Public	
Local	0.315		-0.097		-0.027	
	(0.101)		(0.417)		(0.842)	
Domestic	-1.264	***	-0.284	*	0.254	
	(0.000)		(0.079)		(0.196)	
Share a border	0.802	**	0.111		0.119	
	(0.016)		(0.537)		(0.585)	
Capital	-0.707	***	-0.002		0.248	**
	(0.000)		(0.987)		(0.038)	
Cash			-0.446	***	0.482	***
			(0.002)		(0.005)	
All share			-0.024		1.330	***
			(0.886)		(0.000)	
Unknown consideration			-0.410	***	-0.549	***
			(0.004)		(0.001)	
ln Acquirer size	-0.081		0.117	***	0.816	***
	(0.105)		(0.000)		(0.000)	
ln Relative deal size	-0.489	***	0.131	***	0.767	***
	(0.000)		(0.000)		(0.000)	
Public	-0.743	***	-0.073			
	(0.000)		(0.525)			
Same industry	-0.430	***			-0.041	
	(0.008)				(0.728)	
Same legal origin	-0.785	**	-0.030		0.337	
	(0.017)		(0.868)		(0.130)	
Year dummies	Yes		Yes		Yes	
Number of observations	1,039		2,196		2,196	

Being local does not have a significant impact on the probability of a same industry target. However, domestic targets seem to be less likely to operate in the same industry. Deals paid in cash appear more likely to be in a different industry, or the other way

around. Curiously also deals with an undisclosed method of payment seem more likely to be in a different industry. Positive trust significantly reduces the probability of a same industry target. This sounds plausible, if we assume trust to mitigate the supposedly higher perceived risk in moving into a new industry.

Table 21
Logit regressions on trust and deal characteristics (foreign only)

The dependent variable for each regression is shown in the table. In the consideration analysis, only deals paid fully in cash or fully in shares are included. Positive trust is a dummy variable that takes the value 1 if the level of trust from the acquirer country towards the target country is positive. Share a border takes the value 1 if the target and acquirer countries share a border. Capital is a dummy variable that takes the value 1 if the target is headquartered in the capital of its home country. Cash takes the value 1 if the consideration is entirely in cash, All share likewise if the consideration is entirely in shares. Hybrid takes the value 1 if the consideration includes both cash and shares. Unknown consideration takes the value 1 if the form of consideration is not disclosed. Relative deal size is the deal consideration divided by the market value of the acquirer. Acquirer size is the market value of the acquirer. Natural logarithms of both size variables are used in this analysis. Public is a dummy variable that takes the value 1 if the target is a public company. Same industry is a dummy variable taking the value 1 if the target and the acquirer have the same 4-digit SIC code. Same legal origin is a dummy variable that takes the value 1 if the target and the acquirer have the same origin of legal system.

*, ** and *** mean that the results are significant at the 10%, 5%, and 1% level, respectively. P-values are shown in parentheses.

	Consideration		Industry		Public status	
Dependent dummy variable	Cash		Same industry		Public	
Positive trust	-1.034	***	-0.638	***	0.626	***
	(0.003)		(0.000)		(0.005)	
Share a border	0.807	**	0.070		0.241	
	(0.031)		(0.715)		(0.311)	
Capital	-0.794	**	0.240		0.251	
	(0.020)		(0.190)		(0.271)	
Cash			-0.345		0.930	**
			(0.209)		(0.012)	
All share			0.212		1.182	**
			(0.550)		(0.014)	
Unknown consideration			-0.371		0.003	
			(0.177)		(0.993)	
ln Acquirer size	-0.084		0.024		0.918	***
	(0.434)		(0.687)		(0.000)	
ln Relative deal size	-0.497	***	0.113	*	0.753	***
	(0.000)		(0.065)		(0.000)	
Public	-0.025		0.166			
	(0.950)		(0.444)			
Same industry	-0.434				0.167	
	(0.196)				(0.456)	
Same legal origin	-0.525		0.038		0.184	
	(0.167)		(0.850)		(0.466)	
Year dummies	Yes		Yes		Yes	
Number of observations	333		668		668	

Larger size of the acquirer and larger relative deal size appear to increase the probability of a same industry target. At least the former is slightly surprising since one could assume larger companies to more typically operate in several industries. The latter could intuitively sound more plausible. Relatively large acquisitions could e.g. represent merger of equals -type of deals, in which the target and the acquirer could be more likely to operate in the same industry.

Geographic proximity does not seem to affect the probability of a public target, but there is very weak evidence suggesting that domestic targets are more likely to be public. Targets located in a capital are significantly more likely to be public. The probability of a public target increases when both cash or shares is reported as the method of payment, and decreases with an undisclosed payment method. This naturally reflects the higher likelihood of disclosing the form of consideration when the target is public.

Foreign targets located in positive trust countries are also more likely to be public. This finding is slightly puzzling regarding the trust-related information asymmetry hypothesis, since there is probably more information available about public companies than private. It is of course possible that the result merely indicates that the countries with the highest proportion of public companies available are also the more trusted ones among the countries originating most acquisitions.

5.6 Extent of home bias in M&A volumes

In an attempt to roughly quantify the extent of home bias in M&A volumes, loosely following the methodology of Kang and Kim (2008), a simple measure of expected number of deals between each pair of countries is formulated.

The expected number of deals in every category is based on the assumption that for each target company included in the data set, the potential acquirer is equally likely to be any company from any country included in the sample. This is obviously a naive assumption,

considering that the characteristics of the companies in different countries are likely to differ significantly. However, this simplification allows a rough quantification of the home bias phenomenon. The number of companies located in each of the countries is obtained from Eurostat[7].

Table 22
Extent of home bias in M&A

This table presents the observed number and fraction of deals belonging to each of the categories, against the expected numbers. The expected numbers are based on the assumption that for every acquisition target, the potential acquirer is equally likely to be any company from any of the countries included in the data set. P-values are those of a t-test on the hypothesis that the obseved fraction is higher than the expected.

	Domestic	Positive trust	Positive trust (foreign only)
Expected number of deals	205	855	235
Observed number of deals	1435	1667	260
Expected fraction of deals	0.098	0.409	0.357
Observed fraction of deals	0.686	0.796	0.395
p-value	0.000	0.000	0.021
N	2,093	2,093	658

As anticipated, the observed fractions of domestic deals and deals with targets in positive trust level countries seem to be higher than the expected figures, as shown in Table 22. This supports the hypothesis that the home bias phenomenon, well-documented in portfolio investments, also applies to M&A activity. Companies prefer buying companies in their home country, or at least in a country they trust.

Most importantly, the results regarding trust still hold when domestic deals are excluded. This suggests that the home bias phenomenon extends across country borders, and that trust does play a role in it.

[7] Eurostat statistics are available online at ec.europa.eu/eurostat

5.7 Summary of results

The key findings of the thesis are summarized in Table 23. Each hypothesis and the related key findings are addressed separately.

Table 23
Summary of key results

	Hypothesis	Findings
H1.	*Acquirers earn higher announcement returns from geographically proximate targets than from more distant ones.*	Strong support in the univariate analysis and fairly strong support in multivariate analyses. The impact of proximity is strongest when the target is small and non-public. Consistent with the findings of Kedia et al. (2008).
H2.	*Acquirers earn higher announcement returns from targets located in countries that enjoy a high relative level of trust in the acquirer's home country.*	Strong support in the univariate analysis and fairly strong support in multivariate analyses. The impact of trust is strongest when the target is private, non-local, not located in a capital and operates within the same industry as the acquirer
H3.	*In addition to objective factors, the level of trust towards a country is affected by cultural factors.*	Strong support in the multivariate analysis. This finding is consistent with the results of Guiso et al. (2007).
H4.	*Geographic proximity and the level of trust towards the target country affect the typical deal characteristics.*	Strong support in multivariate analysis. Proximity and positive trust increase the use of shares as payment method. Positive trust level seems to increase the probability of the target being public. Domestic targets and targets located in positive trust countries are less likely to operate in the same industry as the acquirer.
H5.	*Home bias exists in M&A volumes.*	The very simple test performed suggests a statistically significant home bias based on both home country and the level of trust.

6. Conclusions

This thesis shows that geography and distance play an important role in M&A transactions. It also shows that the relative level of trust between countries seems to have an impact that is very similar to geographic distance.

Consistent with prior research findings, geographically proximate acquirers earn higher announcement returns than more distant ones. The impact of proximity is most important when the target is small and privately held. The same results hold for the subsample of domestic targets.

Similarly acquirer returns are higher when the target is located in a country that enjoys a high relative level of trust in the acquirer's home country. The impact of trust is strongest when the target is private, non-local and not located in a capital. Trust also has a significant impact when the target operates within the same industry as the acquirer. These results hold for the subsample of foreign targets as well, which shows that the impact of trust does not result from its correlation with the target being domestic.

Relative trust levels in turn are highly affected by cultural factors, such as similarity of language and religion. This has been shown in prior literature and is again confirmed in this study. There is also evidence suggesting that trade between countries enhances trust between them, or perhaps the other way around. Part of this may be due to an information increasing effect of international trade.

The obtained results provide support for the hypothesis that there is an information advantage related to geographic and cultural proximity. Alternative explanations, such as larger synergy potential, could be possible in local acquisitions, but the impact of relative trust on synergies is more difficult to justify. Difficulties in implementation of non-local acquisitions and acquisitions in countries of low relative trust level could plausibly be a part of the explanation as well. The finding that trust is more important in case the target operates in the same industry might support the implementation difficulty hypothesis, since same industry targets perhaps require more integration.

Plotting the cumulative abnormal returns around the announcement date suggests that there are striking differences in the leakage of information or insider trading in the case of domestic and foreign transactions. The difference is also evident when comparing

deals with a target in a negative versus positive trust level country. The stock price run-up before the announcement is far stronger for acquisitions of foreign targets, and especially so with targets in negative trust countries. The difference between domestic and foreign acquisitions could be partly explained by the larger average size of foreign acquirers and the resulting analyst and news coverage. However, acquirers of targets in negative trust countries are not larger than those in positive trust countries.

Geography and trust also have an impact on typical deal characteristics, and the impact does not always seem to be very intuitive. For example, a target located in the acquirer's home country or another country with a positive relative level of trust is more likely to be paid for in shares, which as a method of payment could be used to mitigate a higher perceived risk and information asymmetry.

Foreign targets located in positive trust countries are also more likely to be public. This does not necessarily support the trust-related information asymmetry hypothesis, since there is probably more information available about public companies than private. Of course the result might only indicate that the countries with the highest proportion of public companies available are also the more trusted ones among the countries originating most acquisitions, which sounds possible.

Domestic targets are less likely to operate within the same industry as the acquirer than foreign ones. Positive level of trust also reduces the probability of a same industry target. This seems somewhat plausible. The perceived risk in moving into a new industry could be assumed to be higher than when acquiring a same industry target, since most companies have best information on their own industry.

The simple home bias test performed suggests that a home bias phenomenon exists in M&A volumes as well. Companies are much more likely to be acquired by domestic companies than would be expected by the number of domestic firms. Companies also seem to have a tendency to acquire companies in countries having a high relative trust

level. These results are similar to the existing home bias literature regarding portfolio investments and international trade.

There is apparently no earlier research linking trust and acquirer returns. In general the role of culture in M&A has to date largely been ignored in academic literature. The idea that geography might play a significant role in acquisition performance is somewhat novel as well. Although most academics might acknowledge the important role of information in M&A, there is little empirical research on its impact so far. The findings of this thesis, along with those reported in a few other recent papers, suggest that the flow of information is not only dependent on geographic location, but also affected by cultural factors.

An interesting question is also what other factors than information might cause the better performance of proximate acquisitions and acquisitions in high trust level countries. Some earlier research suggests larger synergies for proximate acquisitions. From an organization theory's point of view it would be interesting to test if distance and trust level could predict implementation difficulties in acquisitions as well.

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Appendix A
Correlations of the variables

This table presents the correlations between the different variables used in the analysis.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1. Distance																									
2. Local	-0.64																								
3. Domestic	-0.70	0.56																							
4. Share a border	-0.71	0.39	0.69																						
5. Capital	-0.08	0.20	0.00	0.05																					
6. Public	-0.05	0.03	0.04	0.06	0.13																				
7. Cash	0.05	-0.05	-0.11	-0.05	-0.07	0.05																			
8. All share	-0.08	0.09	0.11	0.06	0.12	0.28	-0.30																		
9. Unknown consideration	0.07	-0.05	-0.02	-0.05	-0.04	-0.24	-0.53	-0.33																	
10. Acquirer size	0.10	-0.10	-0.12	-0.07	0.05	0.23	0.07	-0.01	-0.04																
11. ln Acquirer size	0.20	-0.19	-0.21	-0.15	0.05	0.26	0.12	-0.04	0.00	0.62															
12. Relative deal size	-0.08	0.09	0.08	0.06	0.04	0.03	-0.06	0.09	-0.02	-0.06	-0.26														
13. ln Relative deal size	-0.15	0.15	0.15	0.11	0.08	0.19	-0.17	0.23	-0.10	-0.30	-0.60	0.39													
14. Small	-0.04	0.02	0.06	0.04	-0.10	-0.32	-0.02	-0.10	0.04	-0.16	-0.30	-0.05	-0.21												
15. Large	0.03	-0.06	-0.05	-0.02	0.12	0.46	-0.02	0.15	-0.11	0.32	0.44	0.09	0.30	-0.33											
16. Trust	-0.59	0.44	0.84	0.57	0.04	0.08	-0.09	0.09	0.00	-0.09	-0.13	0.05	0.12	0.03	0.00										
17. Positive trust	-0.55	0.39	0.70	0.50	0.03	0.09	-0.09	0.12	-0.05	-0.08	-0.14	0.06	0.13	0.03	-0.01	0.77									
18. Language	-0.73	0.53	0.95	0.75	0.00	0.03	-0.09	0.09	-0.03	-0.12	-0.21	0.07	0.13	0.08	-0.06	0.80	0.63								
19. Language family	-0.69	0.43	0.76	0.63	0.00	0.02	-0.08	0.08	-0.04	-0.10	-0.18	0.06	0.10	0.07	-0.07	0.70	0.58	0.79							
20. Religion	-0.67	0.51	0.91	0.73	0.04	0.07	-0.12	0.13	-0.03	-0.11	-0.19	0.08	0.15	0.05	-0.03	0.83	0.79	0.84	0.78						
21. Difference in GDP	0.47	-0.36	-0.63	-0.41	0.01	-0.02	0.06	-0.05	0.02	0.05	0.11	-0.06	-0.11	-0.01	0.00	-0.43	-0.35	-0.57	-0.44	-0.52					
22. Difference in CPI	0.63	-0.41	-0.73	-0.62	-0.02	-0.04	0.06	-0.09	0.06	0.13	0.19	-0.07	-0.15	-0.05	0.04	-0.67	-0.68	-0.72	-0.73	-0.75	0.46				
23. Genetic distance	0.79	-0.42	-0.75	-0.63	0.04	-0.03	0.04	-0.06	0.05	0.10	0.17	-0.06	-0.11	-0.06	0.05	-0.63	-0.55	-0.75	-0.72	-0.67	0.47	0.69			
24. Iceland	0.27	-0.07	-0.11	-0.17	0.01	-0.01	0.01	0.01	0.01	-0.02	0.01	-0.01	-0.01	-0.03	-0.03	NA	NA	-0.13	-0.10	-0.07	0.09	0.04	0.27		
25. Same legal origin	-0.62	0.41	0.72	0.74	0.05	0.07	-0.08	0.12	-0.04	-0.08	-0.15	0.06	0.11	0.04	-0.03	0.69	0.61	0.79	0.73	0.82	-0.31	-0.58	-0.53	-0.07	
26. Same industry	0.06	-0.04	-0.06	-0.03	0.02	0.05	-0.05	0.07	-0.05	0.02	0.04	-0.02	0.06	-0.02	0.11	-0.05	-0.08	-0.05	-0.05	-0.05	0.02	0.07	0.04	0.03	-0.04

Appendix B
Acquirer returns vs. ln distance

This graph illustrates the relationship between acquirer returns and geographic distance. CARs have been stripped out of the impact of all other regression variables than distance, based on Model 2 in Table 13.